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SHORTAGE OR SURPLUS OF FUNDS TO FINANCE BUSINESS

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THE NATIONAL BUREAU'S POSTWAR CAPITAL MARKETS STUDY

INTRODUCTORY REMARKS*

RAYMOND W. GOLDSMITH
National Bureau of Economic Research

THE FOUR PAPERS of Messrs. Klaman, Mendelson, Robinson, and Shapiro have in common that they report on one or another aspect of the authors' work on the National Bureau's Postwar Capital Market Study. Because the papers have not gone through the Bureau's usual review procedure they should be regarded as expressions of the authors' personal opinions.

As a result of differences in the status of the four projects at the time of writing and of the publication plans for them, the papers differ considerably in approach and content. Two report on projects that were still far from completion, at least with respect to the analysis of the data collected at the time the papers were written. The other two, on the other hand, present some results obtained in the studies. As a consequence, Professors Mendelson and Shapiro present essentially brief progress reports. They discuss methods rather than quantitative results; they raise questions rather than answer them; and they utilize preliminary figures (Mendelson) or data already available (Shapiro) rather than the new bodies of data on which work was still going on at the time of the meeting. Mr. Klaman, on the other hand, was able to summarize a chapter of his report utilizing the data collected in the course of our study on an important new participant in the capital market, the mortgage company. Dr. Robinson, finally, could apply the statistical and institutional material gathered in his study of the market

* This paper by Raymond W. Goldsmith and the following papers by Roland I. Robinson, Eli Shapiro, Saul B. Klaman, and Morris Mendelson were presented at a meeting of the American Finance Association in Cleveland on December 27, 1956. The program was under the chairmanship of David M. Kennedy, Continental Illinois National Bank and Trust Company of Chicago.

for tax-exempt securities to the analysis of a specific problem in his field which, while foreshadowed by the events of past years, had become particularly acute in 1956.

In view of the diversity of the four papers as they are presented here, it may be advisable to provide a brief summary of the scope and objectives of the Postwar Capital Market Study. Such a summary may serve two purposes. It will, first, help to assess the contribution of the four papers by briefly describing the organization of the larger project in which they are imbedded. Secondly, it will provide an idea of the content of a project that should become available in the form of occasional papers or monographs over a period of one to two years beginning in the fall of 1957 and will provide, we hope, material for several fields of financial research.

The Postwar Capital Market Study had its origin in the conviction that notwithstanding a considerable amount of research work that has been done on some sectors of the capital market, there was need for, in the words of the Bureau's Annual Report for 1955, a study "that ties a description of the institutional setting and a discussion of the major economic problems involved to an integrated statistical framework of the flow of funds through the capital market and of the assets and liabilities of financial institutions active in the market."

This statistical framework the study tries to supply through three bodies of data. The first is represented by the statistics of capital formation and of the stock of durable assets. These are the real phenomena that give rise to the financial process, and the real assets in which saving is finally embodied. Annual estimates of national wealth for the years 1945–55 (or 1956) are expected to be made available in the form of an Occasional Paper later this year. They will, in general, tie in with the estimates of a *Study of Saving in the United States* thus forming a 60-year-long reasonably consistent series.

The statistics of saving, showing not only changes in total earned net worth of the main sectors of the economy, but also the changes in the different assets and liabilities constitute the second part of our framework. These changes together are equal to and account for the change in earned net worth if revaluations (realized and unrealized capital gains and losses) are excluded. Here again, the figures essentially extend those of *A Study of Saving* to the first postwar decade, partly to preserve the advantages of a continuous series back to the turn of the century. They are, however, given in sufficient detail to enable the analyst to work with alternative definitions of saving and groupings of savers. These estimates are expected to become available as another Occasional Paper near the end of 1957.

The third part of our statistical structure consists of estimates of the flow of funds through the capital markets on a quarterly basis for the years 1953 to 1955. In many respects an analysis of the capital market cannot be satisfactorily conducted on the basis of annual data in times of rapid structural changes and when the typical business cycle is only of a few years' duration. Similarly, analysis will remain incomplete, and in many ways unsatisfactory, if it is limited to net changes in the different assets and liabilities by which saving is measured. In that case, we lose the distinction between incurrence and repayment of debt and between acquisitions and disposition of equity securities by different holder groups, and the distinction between the creation of new assets, tangible or intangible, and transactions in existing assets. Both deficiencies almost preclude full understanding of the operations of a modern immensely complicated capital market. Ideally, therefore, capital market analysis should be based on at least quarterly flow-of-funds statements on a fairly gross basis, distinguishing all sectors—financial institutions as well as non-financial lenders that are of considerable quantitative importance in the market.

It was obvious from the beginning that the construction of flow-of-funds statements on this scale for the entire postwar period was beyond the resources of our study. Indeed, for most of the period such statements probably could not be built up retroactively in the detail and with the accuracy desired even if we had had much more ample facilities. In this situation, it was decided to invest a limited part of our resources in an experiment, the preparation of quarterly flow-of-funds statistics on as gross a basis as possible for more sectors and for more items of intangible assets and liabilities than previously available, but limited to a relatively short period for which additional data would not be quite as difficult to collect. We finally chose the period of 1953–55, although we now wish we could have included 1956 which may turn out to be the most interesting year of the postwar decade from the point of view of the capital-market analyst. The first part of Professor Mendelson's paper briefly describes what we have undertaken. It will be clear from his description that even for this three-year experimental period we have not been able to go as far as we originally hoped or as is desirable for a thorough analysis of the capital market. All we may claim is to have penetrated for some distance into the jungle and to have made the next explorer's path a little smoother.

In all three statistical studies we are faced with a difficult problem which is being more and more often encountered in similar projects. It is the dilemma of full disclosure of all manipulations of the data in principle enabling the reader to reproduce the final figures from the

original material; and of the financial limitations which prevent the publication of these necessarily bulky documents. We are considering adoption of a compromise which would already go well beyond what is now customary in most studies of this type—making a full set of the intermediate tables available in mimeograph or similar form to the relatively small number of readers who want to use the figures for an analysis of their own, while limiting ourselves in the printed report to the final estimates and selected supplementary data.

These statistical studies provide only the skeleton for an analysis of the capital market. But such a skeleton is essential. Ideally, the studies of the different sectors of the capital market should have waited until the statistical framework was completed. This leisurely procedure was not possible under our project's time schedule. The three monographs dealing with the most important sectors of the capital market—the markets for government securities, corporate securities and loans, and non-farm mortgages—therefore had to be drafted before all the basic statistics were available. However, they all were written with a common set of basic problems in mind and they will be revised to take account of newer data. These problems include the adaptation of capital-market techniques to changes in basic conditions in the supply of and demand for funds; the operation of the allocative function of the capital market; the rise of new financial institutions in response to a specialization of needs and techniques; and the relationship between the flow-of-funds and interest (yield) rate movements and differentials. Illustrations of each of these problems will be found in the papers. Mr. Klaman's entire paper is an example of the rapid growth, amounting almost to the first introduction, of a new type of financial institution. Dr. Robinson's paper illustrates the interaction between the supply and demand situation for a specific type of security and the resulting movements in interest-rate differentials. Professor Shapiro, finally, touches upon the allocative function of the market and the rise of new forms of capital-market techniques.

In their final form each of the monographs is scheduled to provide a reasonably comprehensive analysis of one of the three major sectors of the capital market with special attention to problems such as those just mentioned and with reference to the basic data in the three statistical documents. The three monographs, however, will fail to deal with a number of smaller, although by no means unimportant sectors of the capital market, e.g., credit to agriculture and consumer credit. There will also be some problems which affect several sectors of the capital market and thus are not well suited for treatment in one of the three monographs, e.g., the changes in investment banking organization. It

is intended to deal with these questions in a fourth monograph which will also have the task of integrating the findings of the three institutional monographs and the three statistical reports. Work on such a monograph can be fruitfully started only when the statistical and institutional studies are completed. Hence, our time schedule and plans for this fourth monograph, which should be of the nature of a summary of the entire study and of a guide to further directions of fruitful work, are still rather fluid.

FACTORS ACCOUNTING FOR THE SHARPLY INCREASED COST OF STATE AND LOCAL GOVERNMENT BORROWING*

ROLAND I. ROBINSON
Board of Governors of the Federal Reserve System

DURING THE ALMOST UNBROKEN boom of the postwar decade interest rates increased considerably. The largest relative increase for any major long-term yield, however, was that experienced in state and local government borrowing. The basic long-term yield on high-grade issues of this type more than tripled from the spring of 1946 to the close of 1956: an increase from 1 to more than 3 per cent. Short-term tax-exempt yields went up relatively even more, as was true of all short-term interest rates. Because the underwriting margins required in the turbulent markets near the end of the decade also increased, the costs of borrowing by state and local governmental units more than tripled. Such an increase in interest costs meant that the total amortization cost of a twenty-year serial debt with equal maturities had increased by more than a fifth; for a similar thirty-year debt the total amortization cost had increased by almost a third.

This increase was generally blamed on restrictive monetary policies. The strong demand for funds unquestionably increased interest rates; it was so insistent that without monetary restriction it would have induced a degree of monetary expansion inconsistent with stable prices or a sustainable rate of economic growth. But this line of analysis explained only the general interest-rate increase; the unusual rise in tax-exempt yields had to be explained by other factors.

Evidence developed in the Postwar Capital Market study suggests that the reduced marginal value of tax exemption appears to have been that factor. The proportion of investors for whom tax exemption is of value had shrunk; while the volume of new money offerings had grown greatly. To find markets for the considerably increased volume of offerings, the privilege of tax exemption had to be bargained away for less and less. The faster rate of increase in tax-exempt yields was also accompanied by differences in maturity-yield patterns. The purpose of this paper is to isolate the factors uniquely related to tax exemption

* The views expressed by the author are his own and do not necessarily reflect those of the Board of Governors of the Federal Reserve System.

and to find if they explain the extraordinarily large increase in state and local government borrowing cost.

Factors Accounting for Postwar Increase in Tax-exempt Yields

The much greater increase in yields on tax-exempt state and local government securities is evident in any comparison of interest rate changes. In the spring of 1946 a top-rated state and local governmental unit could have sold its twenty-year obligations at an interest cost of less than 1 per cent. In the closing month of 1956 a similar borrower would have had to pay more than 3 per cent for twenty-year money. The unusual degree of this tripling in interest costs is disclosed by a comparison with other yield changes. During the same interval, the yield on fully taxable United States government twenty-year obligations went from about $2\frac{1}{4}$ per cent to almost $3\frac{1}{2}$ per cent, an increase of $1\frac{1}{4}$ percentage points. The interest cost for newly marketed high-grade corporate bonds rose from about $2\frac{5}{8}$ per cent to roughly $4\frac{1}{4}$ per cent, an increase of $1\frac{5}{8}$ percentage points. Increases in yields on high-grade corporate bonds in the secondary market were even less; about the same as for U.S. Treasury long-term bonds. If yields on state and local government securities had increased only in the same proportion as those on U.S. Treasury or high-grade corporate bonds they would have ended the decade at $1\frac{3}{4}$ to 2 per cent. In other words the major part of the tax-exempt yield increase must be explained by factors applying uniquely to that market.

The timing of many of the major changes in state and local government yields lends some plausibility to the explanation of monetary influence. In the fall of 1947 when active support buying was first used on a major scale to defend par on U.S. Treasury obligations, the yields on tax-exempt obligations jumped more than those of corporate obligations though the markets for both were equally free. The reversal of yields in the fall of 1948 when such support buying was no longer necessary was also greater for tax-exempt securities than for the other two types of obligations. The jump in tax-exempt yields after announcement of the "accord" in 1951 again exceeded the interest rate increases in other sectors of the capital market. Likewise the rise of yields in 1952–53, the fall in 1953–54, and the rise again in 1955–56 were greater in the tax-exempt market than elsewhere.

An institutional fact explains much of this greater volatility of tax-exempt yields under monetary influences. Commercial banks have been an important but quite variable influence in this market. In periods of monetary ease they have often been heavy buyers; in periods of tension

their purchases have fallen off greatly. But this is not altogether a monetary matter; it reflects the fact that commercial banks are one of the few institutional investors who can make profitable use of the privilege of tax exemption. Narrowing of the market for the privilege of tax exemption is one of the central features of postwar capital markets.

Prior to World War II, U.S. Treasury securities offered investors partial tax exemption. This privilege became the monopoly of state and local government borrowers only after 1941. (Some partially tax-exempt U.S. Treasury obligations were still outstanding, even a very few fully tax-exempt ones, but no new ones were issued and these obligations became progressively less and less of a market factor.)

The extremely low yields of early 1946 were partly due to a fear that there might be a shortage of tax-exempt investment outlets now that such was not available in federal obligations. In retrospect the fear seems odd but trade reports current at that time attest to its reality. With full allowance for the market effects of this fear it remains something of a mystery as to why tax exemption should have been given such a high value at that juncture. Applicable income tax rates had just been lowered and in that short idyllic interlude before the threat of war once more became a reality, the expectation must have been for even further tax reductions.

In any event, during the postwar period institutional investment appears to have continued to gain relative to direct individual investment, a movement that had been going for a considerable period. Many of the principal institutional investors are themselves either exempt from federal income taxation, pay only low marginal rates of taxes, or are unable to pass along the value of tax exemption to their equity investors. Life insurance companies are now subject to a $6\frac{1}{2}$ per cent gross investment income tax rate. Public and private pension funds, both among the most rapidly growing investment institutions, can, and usually do, qualify for complete tax exemption. Mutual investment companies can qualify for tax exemption but cannot pass the benefits of tax exemption on their investments along to their stockholders. Among institutional investors, the only two important groups subject to the full corporate tax rate are commercial banks and fire, marine, and casualty insurance companies. Both of these types of institutions have frequently been important investors in tax-exempt securities; on some occasions they have put a large fraction of their available money in such a form. But at the same time tax-exempt securities are hardly the most desirable form of investment for either type of institution. Customer loans doubtless continue to be the prime favorite of commer-

cial banks. And with the special 15 per cent tax rate applying to dividends on corporate equities, fire, marine, and casualty insurance companies can make a more persuasive case for equity investment than for investment in tax-exempt fixed-dollar obligations—except when the price level of the equity market gets very high.

Individual investors with high incomes can choose tax-exempt obligations with considerable logic. But this is a defensive form of investment; it preserves only the dollar integrity of principal and shelters income from taxation. Investment counselors in the postwar decade have emphasized more the preservation of the real value of wealth than of its dollar amount. Capital gains have been more emphasized as an investment objective; they have some tax and many strategic advantages. And other shelters from taxation can be found in such investment media as oil royalties and rental real estate.

The limited appeal of tax exemption to conservative high-income individual investors is illustrated by the estimates of tax-exempt holdings in trust accounts made by Goldsmith in his study of "Financial Intermediaries."[1] Goldsmith estimated these holdings to have been $4.5 billion in 1945 and they had risen to only $7\frac{3}{4}$ billion by 1952. A still later estimate suggests holdings of $10 billion in 1955. These small increases came during a period when the total debt of state and local government was trebling; in other words, the share of total outstanding and privately held tax-exempt securities in personal trust accounts fell from about 35 per cent at the start of the postwar period to roughly 25 per cent at present.

Constriction of the market for the privilege of tax exemption probably explains most but not all of the differential yield movements. In the first place the significance of the under 1 per cent yield on twenty-year state and local government obligations at the beginning of the decade may be questioned. The volume of new issues was negligible; almost the only bonds available were those in the secondary market. The *Blue List* of that period showed offerings only slightly in excess of $100 million. The proportion of issues of top quality was not unusually high. In other words, the yields quoted at that period must have been based on a relatively thin market.

Another factor that might account for a high-grade yield change would be a change in the proportion of state and local governmental units with high credit standing that are borrowing. At the beginning of the decade, the governmental units with high credit standing were borrowing very little; most of those coming to the market had an intermediate credit standing. It could have been said that there was a short-

1. An unpublished National Bureau of Economic Research manuscript.

age of high-grade issues relative to the supply of issues of other qualities. But the widespread need for large state and local governmental capital expenditures has brought many of the most conservatively financed and richest communities into the market. And Public Housing Authority issues, which are of the highest quality, have become an increasingly important factor in the market. There is now no shortage of high-grade issues.

While the supply of high-grade issues has increased relatively, this factor cannot explain the over-all yield increases. Yields of intermediate-grade state and local government securities have increased by just about as much as those of high-grade issues. And the general quality of state and local government credit probably has not changed materially. Large borrowing may have reduced it a bit but at most from something like a "superb" to a "very good" rating.

The large increase in state and local governmental yields compared with the relatively and absolutely much smaller one which has been shown by U.S. Treasury obligations must be considered against the background fact that the marketable debt of the federal government has increased relatively little over the decade while that of state and local government has risen to more than three times its earlier level. The Treasury has had to raise some new money but its major problem has been that of refunding the outstanding debt. And while the total debt grew moderately in the postwar period, the marketable portion of the net debt changed very little.

But this relatively greater increase in debt is not the whole story. While the new money demands of state and local government have been large, so have those of corporations. If the demand for new money explained the differential advance in state and local governmental yields, then the increase in corporate yields should have more nearly paralleled that of state and local governments than that of Treasury obligations. This was not true. Corporate yields, if measured by the cost of new money, went up only a bit more than yields on U.S. Treasury obligations, a matter of $\frac{3}{8}$ of a percentage point at most. Corporate yield experience is much closer to that of Treasury financing than to that of state and local government borrowings. There can be little doubt of the conclusion that the factor of tax exemption has isolated the market for state and local government securities from other capital markets.

Dividing the Subsidy of Tax Exemption between Borrowers and Investors

Strictly speaking state and local government securities are exempt from the income taxes of the federal government and usually the in-

come taxes of the issuing state. But states tax the income from one another's securities freely. In this way, tax revenues foregone by the federal government can be viewed as a kind of subsidy to state and local governmental units—an aid in reducing their borrowing costs. But of necessity this subsidy must be shared. Rational investors will not go beyond the margin at which tax savings equal the yield discount on tax-exempt securities in comparison with the yields on fully taxable comparable investment media. In practice, they probably will not even approach this margin because of uncertainty about future tax rates.

The way in which the subsidy is shared can be viewed as a test of the state of the market for state and local government obligations. If most of the revenue loss of the federal government is recovered by state and local governments in the form of lower borrowing costs, investor demand in the market is obviously high. But if little of the subsidy is retained by borrowers and most of it goes to investors, it can be concluded that the scale of offerings has tended to outrun the natural size of this segment of the capital market.

In practice, this appears to have been just about the case. Estimation of this division of subsidy (or revenue loss) is necessarily complicated and the method used in the longer study cannot be reproduced here.[2] But these estimates support the hypothesis that the natural size of the market for tax-exempt securities has been overrun by the large offerings of such securities in the postwar period.

These estimates show that in 1946 state and local government borrowers apparently gained as much in lower cost as was lost by the federal government in lower tax revenues. In 1947, state and local government borrowers were still retaining in the form of reduced borrowing cost about 65 to 75 cents of each dollar of revenue lost by the federal government. Investors had to be content with 25 to 35 per cent of the gross loss of revenue of the federal government. The proportion retained by state and local government varied from 40 to 65 cents from 1948 through 1952. But in 1953 it is estimated to have fallen about 25 cents. For the first time in the decade investors took the larger share. In the brief recession of 1954–55 the ratio rose a little but by the end of 1956 it had again fallen to a new low. In the closing months of 1956

2. Strictly speaking the reduction in borrowing cost effected on each issue of tax-exempt securities by virtue of the exemption should be compared with the reduction of taxes effected by each investor who owns the securities as long as they are outstanding. A full scale estimate of this magnitude is impossible with present ownership statistics, particularly since we know far too little about shifts in ownership in the secondary market. An approximation can be made by comparing the rate of saving in borrowing cost when a security is first sold with the rate of tax reduction effected by the original purchasers. Even this estimate requires some heroic assumptions as to alternative financing costs and the nature of gross purchases. However, such estimates were made for the years 1947–55. These estimates will be presented with supporting detail in the full report now in preparation.

the privilege of tax exemption lowered state and local government borrowing costs by less than 20 cents for each dollar of revenue lost by the federal government. Most of the value of tax exemption was now going to investors; little of it was aiding in school construction or the other capital expenditures of state and local government.

Maturity-Yield Differentials

Near the end of the postwar decade the maturity-yield patterns of state and local government obligations, as measured by their offering scales, differed more and more from the shape taken by the yield curves for Treasury obligations. The offering scales on railroad equipment obligations (the major corporate security which is sold publicy in serial form) have also differed in pattern from the offering scales on state and local government obligations.

In the early years of the decade, the offering scales on state and local government obligations were generally quite parallel to those for Treasury obligations. This was true before 1947 when yields on short-term Treasury obligations were being held down by official action. From mid-1947 to 1951 when short-term Treasury rates had been released from explicit official control but while long-term yields were being supported at par whenever necessary, parallel maturity-yield patterns continued to prevail. Even after 1951 into 1952 the parallel of maturity-yield relationships continued to be fairly close. But in the boom of 1952–53 the maturity-yield patterns started to vary one from another and in the money and capital markets of 1956 the parallel largely vanished. The yield curve for Treasury obligations assumed a kind of "humpbacked" character: the yields on intermediate maturities exceeded those of either short-term or the very long-term obligations. During a part of this period the offering scales of railroad equipment obligations became flat or very nearly so. But the upward slopes of the offering scales for state and local government obligations not only continued to be considerable, but those of the lower grade of such issues became even greater at the time when slopes of other maturity-yield relationships were vanishing. Unfortunately interest-rate theory gives us few clues with which to explain this phenomenon.

Maturity-yield differentials and the patterns into which they fall have become one of the most frequently employed empirical foundations for interest rate theorizing. When maturity is the sole difference between otherwise homogeneous securities, differences of yield for various maturities seem to offer clues for answering basic questions as to why interest is paid or for what service investors demand the payment of interest. Heretofore analytical attention has been given mostly to

differentials in the high-grade fully taxable markets. Maturity-yield differentials for tax-exempt obligations as represented by offering scales introduces a new factor: the discount of tax-rate expectations.

Maturity-yield differentials appear to have been implicit in the market structures of interest rates for as long as we have reasonably dependable figures. But detailed measurement of the differentials and plotting of so-called yield curves did not come until in the 1930's. In the middle of this decade Macaulay tested the hypothesis that the long-term short-term interest-rate relationship was a kind of implied forecast: an upsweeping yield curve forecast rising interest rates and a downsweeping curve forecast falling interest rates.[3] Though he insisted that such forecasting was implied, he found that it was unsuccessful forecasting. He found no evidence that the long-term interest rates of a period had been anticipated by the preceding long-term short-term interest-rate relationship. Another hypothesis was that of liquidity preference: investors, fearing the capital gains or losses implicit in the fluctuation of long-term yields, would accept lower returns on shorter maturities as a form of loss prevention as well as liquidity assurance. This hypothesis implied that an upsweeping yield curve was the normal expectation; that any other form of curve was a temporary abnormality. But the historians of interest rates showed that downsweeping yield curves appear to have been just about as frequent as upsweeping ones. An alternative hypothesis was simply that the market structure was imperfect in some measure, but not wholly imperfect. The smoothness of the yield curves suggested that there was some arbitraging of near-by maturities but that the market was segmented to such a degree that remoter extremes of maturity for otherwise homogeneous obligations could sell at quite different yields.

The capital markets of the United States certainly must be judged rational institutions, interconnected with effective communication facilities, and staffed with sophisticated and intelligent managers. Differences in maturity-yield patterns for various types of securities could hardly persist if the economic conditions required for arbitrage existed. The differentials increased during the postwar decade and have endured for prolonged periods; they cannot be explained away on grounds of market imperfection.

The most plausible explanation of the observed facts seems to be that the factor of tax exemption so isolates and insulates the market for state and local government securities from other sectors of the capital market that its maturity-yield relationships as well as absolute levels

3. *Movements of Interest Rates, Bond Yields, and Stock Prices in the United States since 1856* (New York: National Bureau of Economic Research, 1938).

of yields can depart from these prevailing in other sectors of the capital market and stay apart for considerable periods. The market for tax exemption is a limited market and when overcrowded with new offerings cannot be arbitraged to conform to the patterns of these other segments of the capital markets.

The humpbacked nature to the yield curve for Treasury obligations in 1956 was basically due to the fact that commercial banks dominate the intermediate-term market. In that year commercial banks were both net sellers of intermediate-term obligations and also active traders of such securities in tax swaps.[4] Furthermore, it can be deduced that the very long-term yields on Treasury obligations were below those prevailing on intermediate-term obligations because relatively few long-term securities were outstanding or were being traded in the market. The few which were offered could be absorbed by investors who wanted these securities for some special reason. A small local government pension fund with limited investment authority would furnish an example of such an investor.

The offering scale of state and local government obligations, however, continued to have quite a bit of slope because the marginal expectation of investors in tax-exempt obligations is for higher interest rates. The very longest-term obligations can be sold only if they offer investors somewhat more than can be earned in the intermediate market.[5] The long maturities have to be baited with more yield than the shorter maturities of the same issues with which they are compared by investors.

Further evidence in support of this general view can be added. The offering scales of intermediate-grade tax-exempt obligations have had even more slope than those of the highest grades. Investors apparently feel that credit risk is not a proportionate but an increasing function of time. In other words, the maturity-yield relationship in the market for

4. The foundation of the process of tax switching lies in the fact that commercial banks can charge all capital losses in excess of capital gains against current income. If a security, which is quoted considerably below book value, is sold and replaced with a security of similar maturity and yield, the current tax rate applies only to the coupon of the replacement issue: The accrual of discount is treated as a capital gain. Thus the greater the loss now taken, and the greater the proportion of subsequent income that can be taken on a capital gains basis, the more tax liabilities are reduced. The only operating requirement is that commercial banks pace their capital gains and losses in such a way that each tends to be concentrated in separate tax years. This is necessary so that losses do not have to be offset against gains but can be charged against current income. The deep discounts and high yields which characterize the prevailing humpbacked yield curve reflect the fact that few investors other than commercial banks are active traders in this part of the market.

5. This hypothesis is supported by the following: One important state and local government issue in early December, 1956, consisting only of intermediate- and long-term serials, was offered with more yield differential between the middle and long maturities than a comparable issue which offered the full range of maturities.

state and local government securities apparently has not paralleled the relationship prevailing in the market for Treasury obligations because investors in tax-exempt obligations compound the joint influence of two risk appraisals: the risk of further increases in yields (and in capital losses on outstanding bonds) and also of a kind of time-function credit risk in the lower-grade tax-exempt obligations.

One negative conclusion can be drawn from the comparison of maturity-yield differentials in the tax-exempt market with those prevailing on fully taxable obligations: Investors do not imply complex tax-rate forecasts in their differential yield appraisal. At almost every juncture, the observed differentials made no sense if tested by prevailing expectations as to tax rates. This is a most odd conclusion. Investors certainly do have tax-rate expectations. And it seems strange that they should be prepared to pay as much for tax exemption in a remote period as in a near-by one. The probable answer is that most fixed-dollar forms of investment imply an absence of forecasting, a defensive or negative kind of view that the best policy an ignorant investor can pursue is to make some rough kind of provision against an unknown and probably hostile future.

THE MARKET FOR CORPORATE SECURITIES
A PROGRESS REPORT

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SUMMARY

AT THE END of 1945 the corporate universe was characterized by a low level of capital assets relative to sales and a high degree of liquidity. The decade ending in 1955 was noteworthy for the high absolute level of investment in plant, equipment, and inventory. Corporations experienced no great financing difficulties in carrying out their expansion program; interest rates did not rise sharply during the period.

The bulk of corporate investment was financed from internal sources of funds—retained profits and depreciation allowances—with internal sources more important in the first half of the ten-year period. The relationship between internal and external financing was primarily dependent on cyclical variations in business activity. In periods of rising business activity short-term borrowing and new security issues were utilized to supplement internal funds. In periods of declining economic activity long-term financing through security issues was continued on a reduced scale and short-term bank debt was reduced. Over the decade ending in 1955 there was an increasing trend toward long-term securities issued to finance investment in plant, equipment, and inventories. All bonds outstanding for non-financial corporations more than doubled from $23 billion at the end of 1945 to $54 billion at the end of 1955. There was some evidence to suggest that reduction in spreads between stock and bond yields encouraged stock financing in the latter years of the period.

The most striking phenomenon in the long-term debt market was the precipitous decline in the importance of individuals as holders of corporate bonds. In less than twenty years individuals' holdings of outstanding corporate bonds fell from two-thirds to about one-

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fifth. The largest holders of corporate bonds were life insurance companies who accounted for 50 per cent of all issues outstanding. Directly placed corporate securities—almost entirely bonds—accounted for about 40 per cent of gross security issues in the postwar decade. Life insurance companies held over 90 per cent of directly placed securities outstanding.

In 1955 and particularly in 1956 growing tightness was evident in the capital market. The liquidity of corporations was worked down and the rate of increase in corporate internal sources of funds also fell. Capital outlays continued to rise. Accessibility to the capital market became critical to insure accomplishment of investment programs. Corporations entered the capital market on an enlarged scale at a time of continued high demands for funds from other sectors of the economy. The fall in liquidity of financial institutions plus the pursuit of a restrictive monetary policy by the central bank served to intensify the rise in yields and led to sharp increases in new financing costs and tightening of contract terms.

The Objective of the Study

In the final analysis the study of the market for corporate securities and loans arises from an interest in relating the operations of the capital market to the financing of investment in the corporate universe. Any study of markets must proceed from an interest in the allocative function which that market performs. It is necessary, therefore, to examine how the economic forces, legal environment, and managerial decisions of individuals and institutions that operate in the market for corporate securities and loans affect the quantity, form, and terms on which funds are made available to corporations. A significant part of the inquiry is concerned with how monetary impulses stemming from actions of the central bank were transmitted to the economy through their effects upon the capital market. The need for such a study should be self-evident. Many aspects of the corporate security segment of the larger study are well known. It is anticipated, however, that by relating each of the participant's monographs to the over-all flow of funds, a clearer understanding of the operations of the capital market will result. Hopefully the completed project will serve as a contribution to the understanding of the financial machinery in our country. For without diagnosis, prescription can beget us little. In many and growing quarters there is a great interest in a thoroughgoing overhaul of the financial mechanism.

The Depression and War Years

Before discussing the demands made upon the capital market in the postwar decade, it is desirable to understand the course and direction of private investment during the preceding fifteen years, a period which includes a decade of depression and six years of war-induced prosperity.

During 1929–39 the country experienced a low volume of investment in plant, equipment, and inventories. There was virtually no change in the net stock of plant and equipment of all non-financial business. Figures reported by the Machinery and Allied Products Institute indicate that the *net* stock of plant and equipment in the United States fell from roughly $180 billion in 1929 to $160 billion at the end of 1939 (in 1955 prices).[1]

The impact of the war upon business finance was that it minimized business' needs for funds on fixed and working capital account. The attack on Pearl Harbor and our entry into the war made tremendous demands upon our resources both industrial and human as the United States shifted to a war footing designed to maximize the output of goods and services needed for the successful prosecution of the war. The material allocation system that was introduced to insure an adequate flow of resources into war and war-related industries permitted few resources to be made available for private investment in plant and equipment.

By the end of 1945, the *net* stock of plant and equipment (in 1955 prices) was roughly $161 billion, compared to $160 billion (in 1955 prices) at the end of 1939. The 20 per cent hike in gross private national product from 1941 through 1945 (in constant 1955 dollars) was due mainly to a more intensive use of existing facilities rather than to any proportionate increase in the physical productive facilities of the country. The capital-output ratio fell from 2.06 at the end of 1939 to 1.42 at the end of 1945 (in 1955 prices).[2]

At the same time, an inventory control system was imposed upon business. With inventories frozen and sales volume rising sharply, the system brought about an extremely low ratio of inventories to sales compared to earlier experience and averted an increase in business' need for funds to build up this component of gross working capital as is normally experienced in periods of rising sales.

1. Machinery and Allied Products Institute, *Capital Goods Review* (No. 23, August, 1955) and mimeographed tables supplied by the Institute.

2. The capital-output ratio was derived from figures on the gross stock of plant and equipment in 1955 prices supplied by the Machinery and Allied Products Institute (see footnote 1). The denominator is the gross national private product consisting of gross national product in 1955 dollars minus compensation to government employees.

At the end of the war non-financial corporations were characterized by an unprecedented volume of liquidity. Their holdings of cash and government securities amounted to approximately $43 billion at the end of 1945 and were practically equal to the outstanding short-term corporate indebtedness. While these corporations were extremely liquid judged by historical standards, they were faced with a great need for funds to finance the replacement of war-torn productive facilities with new physical plant and equipment as well as the need to augment physical facilities to handle the enlarged volume of economic activity that characterized the postwar period.

Funds were also needed to increase working capital. The high and increasing level of sales gave rise to a need to increase inventories, both absolutely and relative to sales. Another aspect of the restoration of more competitive markets in the postwar period was the need to resort to receivables as a method of sales competition which led to a rise in the receivables account.

The Postwar Decade

Because of inter-industry differences in financing, any detailed analysis of the role of the capital market in financing corporate investment must deal with sources and uses of funds on as disaggregated a level as is practicable. Shortly there will be completed annual sources and uses statements for the following breakdown of the corporate universe from 1945–55: (1) manufacturing and mining, (2) railroad, (3) electric and gas utilities, (4) communication, (5) trade, service, and miscellaneous.[3]

Quarterly sources and uses of corporate funds are in preparation for the major industry breakdowns cited above for 1953–55. Annual data, while helpful, preclude a careful analysis of the following kinds of problems: (*a*) understanding the flexibility of the capital markets in adapting to seasonal movements in corporate demands upon that market, (*b*) studying lead and lag relationships in activities affecting the capital market, (*c*) examining cyclical variations in the demand for and supply of long-term capital funds. One critical problem in public policy is the need for adding to our understanding of the short-term effects of central bank activity. Quarterly data on corporate sources and uses of funds should enhance our understanding of the effect of monetary policy upon corporate strategy in securing funds.

Since neither the annual nor the quarterly data are currently

3. Mr. John C. Dawson, of the University of Maryland, has generously supplied his data for the years 1938–50. Availability of these data greatly lightened our task.

available, the general character of business financing in the postwar period will be described briefly by resorting to the Department of Commerce data on sources and uses of corporate funds for the period 1946 through 1955; where possible, brief reference will be made to the Federal Reserve Board's flow-of-funds data also.

The average annual use of funds by corporations in the postwar decade amounted to approximately $31 billion. Of this, roughly $20 billion was used to acquire plant and equipment. The remaining $11 billion was needed to build up the other asset accounts. Roughly $4.5 billion per annum was required to build up the book value of inventories and another $5.5 billion was needed annually to increase the receivables account of corporations.

It is noteworthy that the average annual outlays for new plant and equipment in the postwar decade amounted to nearly four times as large a figure as that for the prewar years and more than triple the figure for the 1920's (all in current prices).

The outlays on plant, equipment, inventory, and receivables were both stimulated and, in large part, financed by the high postwar level of corporate profits and depreciation charges. Annually, about 60 per cent of the need for funds was obtained from retained profits and the depreciation accounts. Net new issues amounted to roughly $5.6 billion per year with the bond portion dominating; net new equity issues averaged $2 billion annually while net new bond issues amounted to $3.6 billion annually. Mortgage loans provided $1.0 billion a year and bank loans accounted for $1.8 billion.

These averages obscure trends over the period and cyclical variations in the pattern of demands made upon the capital market. Thus, long-term funds — security issues plus mortgage loans — showed a continual rise over the period. When the long-term sources fell short of total needs for funds generated by plant, equipment, and inventory outlays, bank borrowing was utilized. When long-term fund accretions were in excess of outlays for fixed assets and inventory, bank borrowing was repaid and/or liquid assets were accumulated. The analyses of these data are not yet complete.

The relative cost of short- and long-term funds obviously affected the pattern described above. However, comparison of the relative costs of these funds was not the sole explanation of the phenomenon. Corporate managements appeared to follow some rules about balance between short- and long-term funds which affected the sources of funds they sought. In the main these rules relate long-term sources

to long-term uses.[4] Because of the almost uninterrupted growth in fixed assets in the postwar decade and the need for augmenting the "permanent" working capital[5] of business, corporations chose continually to raise long-term funds over the period under examination. When these long sources exceeded immediate needs, short-term debt was retired or liquid asset accumulations were accelerated.

Increasing dividend payouts over the period and the volatility of profits after tax are important clues to the pattern of demands made upon the capital market to enable corporations to finance their investment plans. Increasing dividend pay-out ratios with profits constant would obviously result in reduced internal flows of funds. An increase in dividend payments at a time when corporate profits decline and capital outlays remain constant (or increase) results in increased reliance upon external sources of funds.[6]

While common stock was a small portion of total sources of funds, its importance increases over the period. From less than 25 per cent of total external sources in the earlier half of the decade, common stock issues grew in volume to provide about one-third of total external sources in the latter five years. The proportion of common stock to total external sources of funds rose as stock yields declined.

Another interesting development in the postwar decade is the relatively small share of preferred stock financing. From the point of view of the issuing corporation, preferred stock financing has none of the virtues of debt financing since preferred stock dividends were not deductible from income in computing taxable income while interest on debt was deductible. Thus a diminution in the relative importance of preferred shares in new stock financing was observed. Institutions were large-scale purchasers of preferred stock; yields on these shares fell relative to bonds. However, they did not fall sufficiently to induce any striking increases in flotations. If one were to explore this problem below the aggregative level, important differences would appear. A large share of preferred stock financing took place in the utility field. In view of the pressure of regulatory authorities who insisted upon balanced capital structures to take advantage of the lower cost of debt and preferred stock financing, utilities were the largest single issuer of preferred shares in the decade.

4. While this contention is difficult to prove, discussion with corporate treasurers tend to confirm this proposition. Needless to say, conformity to this rule increases as spreads between short- and long-term interest rates narrow.

5. Corporation finance books often refer to "normal" working capital, which is that portion of gross working capital permanently employed in the firm.

6. This argument assumes no reduction in liquid asset holdings.

Some Consequences of Postwar Corporate Financing

As a result of the manner of business financing in the postwar decade, a number of developments stand out.

1. *Change in outstanding debt.*—Total debt in the United States rose from $380 billion at the end of 1945 to $600 billion at the end of 1955. Falling at the beginning of the decade and rising in the latter years, the public debt stood at the same level in 1955 as it did at the end of the war.

Unlike the previous three decades, the period under examination was characterized by a sharp decline in the ratio of public to private debt, explained almost exclusively by the sharp rise in private debt after 1945. Public debt outstanding exceeded the private debt outstanding in 1942 and continued to exceed the latter until 1951 when private debt outstanding exceeded the public debt and continued to increase for each year thereafter. At the end of 1945, private non-corporate debt (including debt of unincorporated business units, real estate mortgage debt of individuals and consumer debt) accounted for 46 per cent of the private debt outstanding. In the succeeding years of the postwar decade, private non-corporate debt more than tripled while total corporate debt more than doubled so that non-corporate private debt accounted for roughly 55 per cent of all private debt outstanding. The principle factor behind the rise in private non-corporate debt was the very sharp increase in mortgage debt outstanding which is the subject of Mr. Klaman's interesting paper.

Corporate bonded indebtedness accounted for about one-fifth of all private debt at the end of the war and for about 18 per cent at the end of the postwar decade. Other corporate debt fell from about one-third of private debt to 27 per cent over the period under consideration. While outstanding bonds and other corporate debt moved similarly, there is greater volatility in the other corporate debt series than in the bond series. In the recessions of both 1949 and 1954, other corporate debt outstanding fell while the corporate bond series showed an uninterrupted rise throughout the entire decade. It is noteworthy that the ratio of corporate bonds outstanding to long-term corporate debt maintained itself at a stable ratio of approximately 60 per cent.

2. *Change in corporate bonds outstanding.*—The volume of bonds outstanding for all non-financial corporations increased from $23.4 billion at the end of 1945 to approximately $53.7 billion at the end

of 1955, a rise of roughly 130 per cent. Examination of differences in industry patterns showed that railroad bonds outstanding fell by roughly 2 per cent over the decade. The utility industry, on the other hand, increased its outstanding bonds by roughly 160 per cent, from $10.4 billion in 1945 to approximately $27 billion at the end of 1955. The most extraordinary increase in bonds outstanding took place in the industrial sector. At the end of 1945 there were $3 billion of outstanding bonds of industrial corporations. An almost sixfold increase took place over the decade so that at the end of 1955 industrial bonds outstanding amounted to $17.4 billion. The foregoing changes in corporate bonds outstanding were in marked contrast with the 1920's. In that period, all corporate bonds outstanding increased by about 35 per cent with industrial bonds rising about 50 per cent, utility bonds by 60 per cent, and railroad bonds rose about 15 per cent.

3. *Change in corporate liquidity.*—By almost any other test of liquidity other than the current ratio, the liquidity position of corporations has deteriorated. The ratios of cash to current liabilities, cash to net working capital, cash and governments to current liabilities and cash and governments to net working capital all fell steadily throughout the decade, reaching their lows in 1956.

Indeed, by the middle of 1956, there is at least the suggestion that the decline in the liquidity position of corporations may impair their ability to carry out intended capital outlay programs. On the demand side, the reduced liquidity position of corporations may cause managements to reassess their capital outlay programs with a resultant postponement of some portion of expenditures for plant and equipment.

One element of ease in the financing of the corporate universe in the postwar decade was the enhanced liquidity of these firms. Net working capital which amounted to $52.0 billion at the end of 1945 had more than doubled by the middle of 1956. While these liquid assets were available for postwar financing, they were not utilized to any extent. The only year in which there was a serious reduction in government security holdings was 1946. Judged by the absolute level of net working capital or the ratio of current assets to current liabilities (which remained constant), the wartime gains in liquidity were preserved. Maintenance of a constant current ratio was due to the increasing resort to long-term debt over the period which is not reflected in any of the traditional liquidity measures.

If one defines corporate external sources of funds to include net

cash issues of securities plus increases in bank and mortgage loans minus increases in net trade credit and liquid assets, there is a close inverse relationship between changes in liquid assets and changes in total external sources of funds.

Thus, the decline in liquid asset accumulation in 1946 was associated with a sharp increase in total external sources of funds. The fall in external sources in 1947 was associated with increases in liquid assets. The same behavior is true for the period 1949 through 1950. Thereafter, through 1952, increases in external sources were paralleled by declines in liquid asset accumulations, until 1954 when the movements were reversed. In 1956 a reduction in liquid asset accumulation was associated with increasing resort to external funds.

4. *Change in institutional holdings of corporate securities.*— Throughout much of the decade, a great deal of attention has been given to the flow of funds into corporate securities through the agency of financial institutions. Our data are not complete as yet, but some preliminary findings are deserving of attention. They suggest the dominant position of financial institutions in the market for corporate securities in the period under examination.

There has been a dramatic shift in the composition of the bond market. By referring to some figures prepared by the Division of Research and Statistics of the Federal Reserve Board we can obtain a clearer notion of changes in holders of corporate bonds. At the end of 1938 there were approximately $46.0 billion of corporate bonds outstanding. The consumer and rest of the world sector accounted for about 65 per cent of these bonds; life insurance companies held about 17 per cent; the banking system's holdings came to 10 per cent.

At the end of 1955 the Board reported $73.0 billion of corporate bonds outstanding. The consumer and rest of the world sector held only 20 per cent of these bonds. Holdings of life insurance companies accounted for more than 50 per cent of the total. Two other institutions whose bond holdings were negligible in 1938 call for attention. State and local government retirement systems increased their holdings of corporate bonds significantly; the same is true for holdings of self-administered pension funds. The rate of growth in bond holdings by self-administered pension funds over this period was eighteen fold; retirement plans of state and local governments increased their bond holdings twelvefold; life insurance company bond holdings quadrupled. Because of the more rapid rate of growth at which new funds flowed into the former institutions, the relative growth rate in bond holdings is not surprising. Judged by the abso-

lute amount of their holdings, life insurance companies are the dominant institution in the corporate bond market. This status is a product of less than twenty years.

There are some tentative findings to report on purchases of common and preferred stock coming into the security markets during the postwar years. Approximately $2.8 billion of net new issues of preferred shares came onto the market from 1946–54. About $3.9 billion of preferred shares were acquired by institutions, broadly defined to include non-profit organizations, foreigners as well as the more conventionally defined institutions. This would imply substantial sale of preferred shares by individuals during this period. There is a suggestion in the data that net sales by individuals were bunched in the recession years, 1949–50 and 1953–54.

Net issues of common shares amounting to $18.0 billion were put on the market during 1946–54. Over this same period some $15 billion were acquired by financial institutions. Net decreases in individual holdings of common shares were concentrated in 1950, 1951, and 1954. The large acquisitions of common stock were found in the pension funds, non-profit organizations, investment companies, and life insurance companies.

The New-Issue Market

One critical element in the market for corporate securities and loans is a study of the terms on which new funds can be raised. Success in floating new issues depends upon the success in pricing new issues for public sales relative to the yields on comparable outstanding issues. The results of some preliminary work in this area, while extremely tentative, are worthy of mention.

The behavior in the new-issue market for corporates in the spring of 1953 appears to have been a one-time episode where the new-issue marketing machinery responded in a disorganized manner to a restrictive monetary policy. Tightness—as reflected by new-issue yields—was more evident in the latter half of 1955 and especially 1956 than was true in the spring of 1953. It would appear, therefore, that the initial impact of a flexible monetary policy after two decades of low money rates was to cause a cumbersome if not fearful reaction on the part of the wholesalers of new corporate securities. Having learned (or relearned) the lesson of changing money rates in the earlier period (1953), the participants in the market for new corporate securities reacted to tightness in 1956 with more continuity of behavior.

Two aspects of the new-issue market are currently being explored.

First, the yields on new issues during and after the trading account is maintained are being examined. The work has not progressed very far. However, for the latter part of 1955 and early 1956 an increasing proportion of new issues exhibits a sharp increase in yields immediately after the trading account is abandoned. If cyclical variations in the incidence of rising yields after the distribution stage are clearly discernible, there should be improvement in knowledge about the ability of investment bankers to price new issues under conditions of flexible monetary policy and uncertainty about the direction and course of interest rates.

Second, a related study of the new-issue market examines the relationship between yields on new issues and outstanding bonds. The procedure has been to examine new issues in the period 1953–55 and to plot the yields at which they are offered to the public. An attempt was then made to find comparable outstanding issues for the same companies and to compute the yields on the outstanding issues on the same date as the new issues were offered.

The preliminary work covering the years 1954 and 1956 produced interesting tentative results. In 1956 new-issue yields were substantially higher than their outstanding counterparts.[7] One explanation of this behavior is that investment bankers priced new issues higher than their outstanding counterparts because of the enhanced uncertainty about their ability to sell such issues in a market characterized by falling bond prices (increasing yields). However, in following this procedure for the year 1954, the results show new-issue yields are below their outstanding counterparts. Are these results in conflict, or do they represent normal behavior for different periods of interest rate behavior? Is it true that under conditions of falling money rates new issue yields are below their outstanding counterparts and that the explanation lies in the (lower) wholesale marketing costs for new issues in contrast to the (higher) retailing costs of selling outstanding bonds? The procedure is being repeated for the years 1953 and 1955 to ascertain whether the same relationships hold true. It is expected that these data will add to our insights into the affects of changing money rates in the capital market upon the terms at which new issues can be marketed.

In concluding this paper, one hypothesis about the economic stability contribution of the public offering sector of the new-issue

7. Since indenture terms were not examined, the comparability of new and outstanding issues is not perfect. But, a sample of indenture terms indicates more severe terms on new issues in 1956 than on earlier issues. This would suggest even higher "costs" on new issues in 1956 than is true from an examination of yields alone.

market is put forth. The slim capital accounts of the investment banking fraternity considerably reduce their capacity to absorb losses from undigested securities or sales at prices below underwriting prices. Taken in conjunction with the difficulty in pricing new issues mentioned earlier, periods of increased uncertainty about interest-rate movements may cause investment bankers to turn away prospective applications and/or agree to underwrite at yields (to the issuer) sufficiently high to cover the enhanced risk of holding unsold issues. In periods of tight money, interest costs to issuers are raised by an amount more than the rise in the "pure" rate of interest to compensate for the uncertainty premium. Thus, some borrowing and capital formation is reduced. Alternatively, in time of monetary ease, investment bankers anticipate rising bond prices and thus lower risk premiums which reduces the cost of borrowing and encourages capital formation.

Of course, it may be argued that high yields in the corporate sector result in capital market flows to that area away from hoards or from alternative active uses of funds. If this occurs, the capital market is performing the allocative function of getting funds to the higher yield areas and thus insuring that relative scarcities of productive resources are remedied by movement of funds (and real resources) to these scarce areas.

MORTGAGE COMPANIES IN THE POSTWAR MORTGAGE MARKET*

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THE POSTWAR DECADE has witnessed a number of basic changes in the structure and organization of mortgage debt and markets and in techniques and characteristics of mortgage market operation.[1] Throughout this period of change, institutions in the market have remained essentially the same as in the prewar years. The one major exception is the mortgage company.

Among currently operating institutions, none is more clearly a product of the changing postwar market framework nor has been more closely associated with new market techniques and characteristics than has the mortgage company. Because its business consists essentially of originating and servicing mortgage loans for institutional investors, it may be appropriately characterized as a secondary financial intermediary. It is an institution which has changed radically from its early predecessors, which has grown apace with the developing national mortgage market, which has facilitated the expansion in, and new uses of, short-term commercial bank credit in mortgage operations, which has been a major instrument in the development and use of new mortgage commitment techniques, and which has provided a bridge between primary and secondary mortgage markets.

Despite the integral role and growing importance of mortgage companies in the changing postwar mortgage market, very little quantitative or qualitative information has been available on their financial structure and mortgage operations, much less in fact than for any other type of financial institution active in the mortgage

* My indebtedness is great to many individuals and organizations for help in the larger study of mortgage companies of which this paper is a summary, and is recorded with pleasure in a forthcoming National Bureau Occasional Paper. I wish to note here, however, my deep appreciation to Mr. Milton Kelenson, my assistant throughout the study, for performing so ably the difficult statistical work basic to its successful completion. The views expressed by the author are his own and do not necessarily reflect those of the Board of Governors of the Federal Reserve System.

1. These changes are analyzed in forthcoming Occasional Papers of the National Bureau of Economic Research based on the study of postwar mortgage markets.

market. For this reason, a major effort was made in the National Bureau's Postwar Capital Market Study to develop new data on mortgage companies, an effort which has met with a considerable measure of success only because of the full co-operation of federal officials, trade association officers, and individual company executives.

Sources of New Information

The basis data for this paper were developed from two sources: (1) mortgage company annual financial statements for 1945–55 filed with the Federal Housing Administration and transcribed by FHA especially for this study, and (2) a special questionnaire survey of the quarterly financial structure and mortgage operations of selected companies for the years 1953–55. In addition, to gain an insight into the developing history and structure of mortgage banking, as well as the nature and characteristics of current operations, interviews were conducted with mortgage company executives and others having wide knowledge of, and experience in, industry operations over several decades. This paper is a summary of these statistical and qualitative investigations.

Before an institution may deal in FHA-insured mortgages, it must obtain approval from the Federal Housing Administration. To maintain "approved mortgagee" status, moreover, institutions not supervised by federal or state banking or insurance authorities must, among meeting other requirements, file a financial statement at least annually with the FHA in Washington. Because of these requirements and because the bulk of mortgage companies deal in FHA-insured mortgages, the Federal Housing Administration has become the sole repository of comprehensive financial information on these institutions. In making data available for this study, FHA officials selected the necessary sample of institutions and transcribed the basic financial information while withholding identification of the individual institutions involved.

The combined annual balance sheet of mortgage companies for the decade 1945–55 is based on a complete transcription of summary records of 298 companies with assets of $1 million or more in 1954, and on a 10 per cent sample of 556 additional companies with assets of under $1 million in that year. The former group of companies held well over four-fifths of the assets of all 854 companies in 1954 and about the same proportion in 1945, thus assuring adequate coverage and representation of the financial status of mortgage companies for earlier as well as later postwar years. Several adjustments to the raw

data, necessary before final balance sheets could be derived, are described in detail in a forthcoming National Bureau Occasional Paper and need not detain us here.

In a special National Bureau mail questionnaire survey of some 300 selected companies, annual balance sheet data from FHA were supplemented by quarterly financial data and information on mortgage operations during the period 1953–55. The survey was planned and companies selected with the full co-operation of the Mortgage Bankers Association of America. The survey was limited to the largest companies since it was clear at the outset that the response would be too small and irregular to maintain the representativeness of any sample design. Replies in varying degrees of completeness were received from 99, or about one-third of the companies surveyed, holding about one-fourth of the total assets of all FHA-approved mortgage companies. There was very close agreement between the financial structure of the smaller number of surveyed companies and that of the larger number of companies derived from FHA records. Details of adjustments made to the survey data are given in the National Bureau Occasional Paper referred to earlier.

Origin and Growth of Mortgage Companies

The origins of specialized mortgage banking in the United States are not altogether clear. Modern mortgage companies as they operate today and their techniques and characteristics may be said for all intents and purposes to date from the advent of FHA mortgage insurance in 1934. The introduction and wide acceptance of the VA mortgage guaranty program some ten years later contributed importantly to the extraordinarily rapid postwar growth of mortgage companies.

Standardization of mortgage contracts, uniformity of, and improvement in, property and borrower appraisal techniques, and minimization of risk resulting from the introduction of federal mortgage insurance and guaranty reduced geographic barriers to mortgage investment by financial institutions and enhanced negotiability of contracts. Insurance companies in particular, legally less bound to local investments than other institutions, became strongly committed to a national mortgage market program following an initial period of caution and testing with respect to the dual innovation of federal mortgage underwriting and long-term fully amortized mortgages. For most insurance companies the problem of acquiring and servicing out-of-state mortgage investments was resolved by appoint-

ing locally owned and operated mortgage correspondents rather than by establishing branch offices or subsidiaries of the parent company. The mortgage banking industry undoubtedly owes a large part of its growth and character to this basic decision of the life insurance companies.

Few companies currently in operation have a continuous history reaching back before 1930. Those in existence when the Federal Housing Administration was established shifted the focus of their activity from individuals to institutional investors. Individuals are not permitted to deal in FHA-insured mortgages and the long-term amortized mortgage generally was not well suited to their investment needs. Moreover, many mortgage companies became the direct representatives of institutional investors in local markets whereas formerly most companies initiated mortgage transactions on their own responsibility. Finally, mortgage servicing, not a significant part of early mortgage company operations, was a natural outgrowth of the widespread adoption of monthly mortgage amortization and became the basic income-producing activity of the modern mortgage company.

Accompanying the rapid rate of expansion in federally underwritten mortgage debt between 1945 and 1955 was a remarkable rate of growth in the mortgage banking industry. The number of mortgage companies nearly doubled in this decade while commercial banks, savings banks, and savings and loan associations declined slightly in number. Far more spectacular was the tenfold increase in mortgage company assets from an estimated $160 million in 1945 to $1.8 billion in 1955. Among other types of financial institutions active in mortgage markets, only savings and loan associations had a rate of asset growth anywhere near that of mortgage companies. In the second half of the decade, particularly, assets of savings and loan associations increased almost as rapidly as those of mortgage companies, both more than doubling. The much more rapid growth of financial intermediaries specializing in residential mortgage operations, compared with other types of financial intermediaries, is a clear reflection of the extraordinary expansion of the postwar home mortgage market.

Volume of Mortgage Servicing

The importance and growth of mortgage companies, however, are not adequately measured by their assets. Consideration must especially be given to the volume of mortgage loans they service for in-

vestors. Estimates derived from this study suggest that by the end of 1955, the total volume of mortgage loans being serviced by mortgage companies was close to $20 billion, more than half again the estimated 1953 volume, and more than three times the mid-1951 volume reported to the Federal Reserve Board in connection with registration under Regulation X.

The rate of increase in mortgage servicing by mortgage companies has been considerably faster than in total home mortgage debt outstanding, so that by the end of 1955 mortgage companies were servicing close to one-fourth of the 1-to-4-family mortgage debt compared with about one-eighth in 1951. Furthermore, the estimated volume of FHA and VA loans being serviced by mortgage companies was approaching one-half of the total of such loans outstanding at the end of 1955, compared with little more than one-fourth in mid-1951. Finally, when comparison is made between mortgage company servicing and home mortgage debt held by life insurance companies, mutual savings banks, and FNMA, for whom the bulk of all servicing is done, it appears that in 1955 these institutions were having two-thirds of their total home mortgages and four-fifths of those federally underwritten serviced by mortgage companies.

Financial Structure of Mortgage Companies

Perhaps the outstanding characteristic of the financial structure of mortgage companies is its relative simplicity. In originating and servicing mortgage loans for institutional investors, mortgage companies use funds principally for closing mortgages and carrying them temporarily in inventory. The chief source of funds to finance this activity is commercial bank loans. Essentially, this financial pattern is typical for mortgage companies in all asset size classes, with a somewhat greater specialization of uses and sources of funds among larger than smaller companies.

Over the postwar decade mortgage and construction loans held by mortgage companies increased from less than $100 million to $1.4 billion, a markedly greater rate of growth than in total assets or other components of assets. As a consequence, mortgage loans increased their share in total assets between 1945 and 1955 from less than one-half to over three-fourths. This extraordinarily rapid growth reflects in part the unusual character of the beginning and terminal years of the decade—the one a year of transition from war to peace with little mortgage activity, the other a year of great prosperity and unusually rapid expansion in mortgage lending. Through

most of the period under review, mortgage loans accounted for between two-thirds and three-fourths of mortgage company assets.

Paralleling mortgage loans as the chief use of funds, notes payable to banks have constituted the chief source of funds over the postwar years. Mortgage companies borrow a small amount of funds from non-bank sources, but these are estimated to have amounted to 5 per cent or less of their total borrowings in each postwar year. From a low of $61 million in 1945, notes payable rose to $426 million in 1950 and to over $1.2 billion in 1955. These sharp advances increased the share of notes payable in total liabilities and equities from less than two-fifths at the end of World War II to two-thirds ten years later. In most postwar years mortgage companies have apparently financed close to 90 per cent of their mortgage inventory through bank borrowing.

Of special interest as a reflection of recent mortgage market developments, including the use of new market techniques, was the sharply rising importance of funds obtained by bank borrowing in 1954 and 1955, closely associated with the rising use of funds for mortgage inventory. During 1954 and early 1955, funds for mortgage investment were readily available and institutional investors made heavy commitments to acquire mortgages. As capital markets began to shift from ease to stringency later in 1955, mortgage funds and regular take-out commitments became progressively harder to obtain. In this setting, new commitment techniques, developed in earlier years, were widely adopted together with a broadened usage of interim commercial bank financing.

An increasing proportion of mortgage and construction loans was originated by mortgage companies under "forward" and "standby" commitments, both types reflecting a current shortage of mortgage funds relative to demands. The forward commitment technique is one in which an institutional investor obligates itself to acquire specified mortgage loans from an originator within a stated period of time running as far ahead as two years. The standby commitment is one in which an institution agrees to purchase mortgages at a price so far below the prevailing market price that there is little likelihood of its having to take up the commitment. Such a commitment is given principally for the fees associated with it. To a builder or mortgage originator, the advantage of a "standby" is that it makes it possible to obtain construction financing when regular commitments are unavailable and provides time to find a permanent investor for mortgages to be created.

The effect of the new commitment techniques and the market stringency on mortgage companies was generally to require them to hold mortgages in inventory for a longer period than usual. This they could not do without appropriate commercial bank financing. As a consequence, variations of the regular short-term bank loan, long used to finance interim needs between loan processing and delivery to ultimate investors, were developed under the general term of "warehousing." These variations essentially involved an extension of maturities, increased amounts of credit on a revolving fund basis, and loans backed by standby rather than regular commitments. Without the support of extended interim financing from commercial banks, mortgage companies could not have operated effectively in late 1954 and 1955.

If forward and standby commitments continue as basic market techniques, mortgage companies may continue to operate with larger inventories than has been customary in the past, holding committed mortgages for principals or seeking permanent investors for mortgages created under "standbys." In any event, whether operating with a smaller or larger inventory, mortgage companies will undoubtedly continue to rely heavily on commercial bank credit in the future as they have in the past.

By the same token, commercial banks active as interim real estate mortgage lenders will depend on mortgage companies as their chief outlet for such lending. In recent years, according to Federal Reserve Board surveys, 75 to 90 per cent of commercial bank loans outstanding to real estate mortgage lenders was to mortgage companies. The importance of commercial bank interim real estate credits in postwar mortgage markets has increased directly with the rapid growth in mortgage company activities. The data developed in this study on mortgage company notes payable to banks, therefore, are a good measure of the volume of commercial bank interim real estate financing in the postwar decade, supplementing data recently made available by the Federal Reserve.

Mortgage Loan Closings and Investor Commitments

Mortgage companies are able to originate a volume of mortgage loans substantially larger than their own resources would permit because loan closings are typically based on firm investor commitments to purchase and financed through bank borrowing. Few companies undertake to close and sell a large proportion of mortgage loans on

their own financial responsibility. Nearly four-fifths of those responding to our survey indicated that they closed at least 90 per cent of their loans only after receiving an allocation of funds or firm commitment from an institutional investor. Only among some of the largest companies was it indicated that a significant proportion of loans was closed without firm investor commitments.

The technique of originating mortgage loans on the basis of fund allocations or firm commitments is primarily a postwar phenomenon. Prior to the war, operating on a much more limited scale, many mortgage companies closed loans on their own responsibility and financed a large portion of the loans so acquired through commercial bank lines of credit while seeking permanent buyers for their inventory. Even after the war until the spring of 1950, when institutional investors were actively seeking loans in greater volume than were available, mortgage companies had little difficulty in marketing all the loans they could originate, and hence operated extensively without prior commitments. The change in market conditions following the Federal Reserve–Treasury Accord, and the intermittent stringency which has been a part of the capital market scene ever since has resulted in the widespread adoption of the prior commitment technique as the basis of most mortgage company operations. At the risk of oversimplification, the situation may be summarized in the statement that the tighter the capital market, the greater the dependence of mortgage company operations on investor commitments; the easier the market the less the dependence.

Short-Term Movements in Mortgage Inventory

The basic nature of mortgage company operations, as well as the influence of capital market changes on these operations, are interestingly reflected in short-run movements in mortgage inventory. While subject to shortcomings inevitable in a mail questionnaire survey, quarterly data obtained in this study provide useful guideposts of mortgage company activities during periods encompassing both stringency and ease in capital markets.

During the four quarters of 1953, the volume of mortgage inventory changed little, even as earlier pressure on capital markets was giving way in the second half of the year to market ease and general declines in interest rates. Beginning early in 1954, as investors became increasingly active in mortgage markets amid a setting of continuing credit ease and declines in competitive interest rates, mort-

gage inventory of mortgage companies grew rapidly and without interruption through the third quarter of 1955. A leveling off in the last quarter of 1955 reflected an earlier reduction in the unusually high rate of new investor commitments and sale of completed mortgages from inventory.

These movements in mortgage holdings are suggestive of time lags in mortgage company activity following changes in capital market conditions. Not until after mid-1954, about one year after markets began to ease, did mortgage inventory held by mortgage companies begin to expand rapidly. Between mid-1953 and mid-1954 institutional investors were increasing their allocations of funds and commitments for mortgages to mortgage companies. The largest part of these arrangements did not result in completed mortgages until the third quarter of 1954 when the rate of mortgage inventory growth increased sharply, as did bank borrowing to finance loan closings. While the rate of increase slowed thereafter, growth in both mortgage inventory and bank borrowing continued at a faster rate than that of total assets through the end of 1955.

Notwithstanding varying rates of change in mortgage company assets and mortgage inventory between quarters of different years, a rather definite seasonal pattern of operations seems to emerge from the data. The rate of growth in total assets, mortgage loans, and notes payable is successively larger through the first three quarters of each year and declines in the fourth quarter. This third quarter peaking results from the nature of the relationship between mortgage companies and institutional investors and the seasonal nature of building activity.

There is little similarity of movement or consistent relationship between total home mortgage debt and mortgage debt held by mortgage companies. There does, however, appear to be a definite complementary relationship between growth in mortgage company inventory and in mortgage holdings of life insurance companies, which dominate purchases of loans from mortgage companies. The greatest increase in life company mortgage holdings occurs consistently in the fourth quarter of each year, reflecting chiefly acquisitions of government underwritten mortgages. The clear implication is that the rate of growth in mortgage inventory of mortgage companies declines sharply in the fourth quarter of each year as life insurance companies increase their rate of acquisition, especially of federally underwritten mortgages in which mortgage companies concentrate their activity.

Conclusion

The modern mortgage company is a closely held, private corporation, with a comparatively small capital investment relative to its volume of business, subject to a minimum degree of federal or state supervision, whose principal activity is originating and servicing mortgage loans for institutional investors. It is not unlike the municipal bond dealer or securities underwriter, carrying a temporary inventory with the help of short-term bank credit. Adapting its operations to changing capital and money market conditions and to new techniques in the mortgage market, the mortgage company has used traditional short-term credit sources more intensively to supplement long-term funds in periods of capital market stringency.

More than any other type of financial institution, mortgage companies owe their extraordinarily rapid rate of growth to the introduction and expansion of federal mortgage insurance and guaranty. That the fortunes of mortgage companies are closely linked with federally underwritten mortgage programs is verified by the study on which this paper is based. This study showed that in each of the years 1953–55 nine-tenths of loans held, and from three-fourths to over four-fifths of loans closed, were VA-guaranteed or FHA-insured. The future pattern of mortgage company development and growth will undoubtedly depend considerably on the future course of these federal credit aid programs. Should their size and importance diminish in the years ahead, mortgage companies might grow much less rapidly in the future than in the recent past. Efforts to expand their conventional loan business substantially might be blunted by competition from local lenders traditionally engaged in this type of operation, as well as by problems of marketing and servicing conventional loans for out-of-state investors.

On the other hand, the experience and techniques developed by mortgage bankers in the origination of federally underwritten mortgages may well be adapted to conventional mortgage lending and the market for this type of loan expanded greatly. In the final analysis, expansion of conventional mortgage business by mortgage companies will depend on the ability and willingness of out-of-state investors to increase their activity in this area of lending if opportunities in the federally underwritten field become limited.

In any event the likelihood that the role of the federal government in mortgage and housing markets will diminish in the years ahead is not very great. Mortgage insurance under FHA is already deeply en-

trenched in the American real estate scene and is likely to continue a basic part of federal economic policy regardless of the political party in power. The VA-guaranty program, however, is now scheduled to terminate for World War II veterans in July, 1958, having been extended from July, 1957. Whether or not this program will finally be terminated as scheduled will almost certainly depend on economic conditions at the time. Moreover, the Korean GI Loan program is not due to expire until early 1965 and there is a potential of some six million veterans eligible for such loans.

THE FLOW OF FUNDS THROUGH THE CAPITAL MARKET, 1953–55: A PROGRESS REPORT*

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THE OTHER PAPERS on this panel dealt with developments in some of the major capital markets in the period covered by our study. This paper is devoted to the quarterly flow of funds through the whole market from 1953 through 1955. It is divided into two parts. The first deals with the nature and some of the problems of measuring quarterly flows. The second part discusses some developments in the capital market suggested by the data on these flows.

I. THE NATURE AND PROBLEMS OF MEASUREMENTS

The statistical material utilized in the postwar capital market project can be divided into four parts. First, we have used the annual flow-of-funds estimates made by the Research Division of the Board of Governors of the Federal Reserve System. Secondly, we have developed a modified set of moneyflows accounts for the capital market on a quarterly basis for the years 1953 through 1955. Thirdly, we have extended many of the estimates made in *The Study of Savings in the United States* through the years 1946–55. And lastly, we have developed or gathered a variety of supplementary statistics.

Our discussion is confined to the quarterly moneyflows through the capital market. This set of accounts is based on the Federal Reserve Boards' flow-of-funds accounts but differs from them in some respects such as: (1) We have an additional sector containing the subsectors mortgage companies, finance companies, and personal and common trust funds which are imbedded elsewhere in the Board's accounts. (2) In contrast with the great detail found in the Board's presentation of non-financial flows, we have netted all non-capital-account non-financial flows into a single net flow, *net non-financial flows n.e.c.* (3) We have developed the financial flows in greater detail. We show, among other things, corporate securities broken down by types and industries. Thus while we both measure the amount of funds demanded on capital account, the Board pre-

* The author is indebted to the other members of the project, and particularly to Dr. R. W. Goldsmith and Professor Eli Shapiro, for their very constructive criticism.

sents a much more detailed statement of the supply of inside funds, and we show a more detailed account of the supply of outside funds.

Measuring moneyflows on a quarterly basis raises many problems that are avoidable when dealing with annual flows. There are far less basic data available. For most of the major subsectors, the annual data are reasonably good. For many of them, even the semiannual data are fairly satisfactory. But for many subsectors, both major and minor, data for first and third quarters are fragmentary. We have been forced to utilize bits and pieces of evidence to approximate the quarterly flows. The result has been that, in the strictest sense, some of our flows are not comparable. Typically this occurs in those subsectors, such as fire and casualty companies, for which only fragmentary quarterly information exists other than the Treasury survey of ownership of federal obligations. In such cases, our measures of flows of federal obligations are largely blowups of the Treasury data, whereas other flows are mere interpolations with whatever adjustments the available evidence suggests.

The problem of timing valuation adjustments arises when dealing with periods smaller than a year. There are four different valuations an economic organism can use in reporting its assets: cost, book, market, and conventional (in the case of insurance companies this is known as statement values). The first and third are clear cut. The second and fourth are not. Book value is the value at which the assets are carried on the books. As such they may be the same as any of the other three or some hybrid. In the case of quarterly flows any adjustments that have been made must be distributed over the quarters. Unless specific regulations exist, the practice of when, or how frequently, valuation adjustments are made varies from transactor to transactor. Within-the-year data for sectors are generally hybrid sums of adjusted and unadjusted data. The difficulties are practically insurmountable. In most instances, where flows were not directly measurable as the difference between reported or estimated purchases and sales, we distributed the adjustments arbitrarily to the quarters.

II. The Flow of Funds[1]

Time does not permit either an extensive discussion of the techniques we used to deal with these problems or of the flow of funds in the capital market in the three-year period covered by our quar-

1. The data used in this section are prelimininary and some of them are subject to minor revisions.

terly data. We shall confine further discussion to a cursory examination of the latter, and a description of some of the phenomena which seem to warrant further investigation. Furthermore, we shall confine our discussion to the market for such major financial instruments as Treasury, municipal, and corporate securities, and mortgages. We shall use the term "capital market" as equivalent to the market for these instruments.

The year 1953 opened with some easing of the pressures that had been built up in the preceding months, but by no means with an easy money market. The markets remained tight and interest rates relatively high throughout the whole of the first quarter and indeed into the second quarter. By the end of the second quarter conditions eased markedly, a development reflected in a sagging of yields on interest-bearing securities which continued until almost the end of 1954. We can now see that the firming of the markets at the end of 1954 and early 1955 was the beginning of the tighter markets that developed in 1955.

During this three-year period the volume of corporate bonds outstanding increased by $13.4 billion. The net issue[2] of corporate stock exceeded $7.3 billion. The Treasury issued on balance $7.9 billion of obligations and the interest-bearing state and local government debt rose by $14.4 billion. The volume of mortgages outstanding increased by $38.7 billion, almost as much as all other securities combined.

Within this three-year period the net flow of funds through the capital market is characterized by a very high degree of volatility from quarter to quarter. It varied from a low of less than $0.5 billion of net issues in the first quarter of 1954 to a high of $11.4 billion in the third quarter of 1953. While the issue of corporate securities contributed to this volatility, the major component is the net issue of federal obligations, which reflects the unevenness of the flow of funds into and out of the Treasury.[3] Nevertheless, the volatility of total net flow is not completely a seasonal affair.

A great deal of the brunt of the variability in the net issue of Treasury securities is absorbed by combined action of the Federal

2. The phrase "net issues" is used loosely throughout this paper. In most instances it means "increase in the volume outstanding." The shorter phrase is generally used to avoid awkward terminology, particularly when the flow is a sum of the net issues of one or more types of instruments and the net change is the volume outstanding of other types.

3. The net change in federal obligations outstanding varied from minus $4.6 billion in the first quarter of 1954 to plus $6.4 in the third quarter of 1953. These are the same periods in which the total net flow reached its minimum and maximum.

Reserve System and the commercial banks, i.e., the banking system.[4] For a major part of the period the banking system appeared to be acting as a buffer between the Treasury and the capital market. When the Treasury was a net seller of securities, the banking system tended to be a net buyer and when the Treasury on balance redeemed its securities, the banking system tended to be a net seller. This pattern changed in 1955 when the banking system was substantially a net seller of Treasury securities most of the year, and by the end of the year had reduced its holdings by over $7.0 billion, although the Treasury's debt increased by $2.3 billion.

Experimentally we have treated the banking system as a buffer with some interesting results. We did this by subtracting from the volume of federal obligations outstanding the holdings of the banking system and deriving our net flows from this adjusted series. The results were: (1) a shift in the low of the change in adjusted Treasury securities outstanding from the first to the second quarter of the year, and a consequent elimination (not a shift) of the seasonal low in the total flow of funds, as reflected in total net issues, in the first quarter of the year; (2) a marked reduction in the volatility in the flow of funds; (3) the emergence of a variation in the flow of funds more consonant with the interest rate changes.

If the banking system is treated this way we find, upon examining the adjusted series on issues, that the volume of securities and mortgages marketed rose from an average of $6.2 billion per quarter in the latter half of 1953 and the full year 1954 to an average of $9.2 billion per quarter in 1955. We also find that there are no perceptible differences in the aggregates of securities and mortgages issued in the first half of 1953 when an average of $6 billion per quarter were marketed and during the easier markets that prevailed until 1955 when an average of $6.2 billion per quarter were issued. Indeed, in three out of the six quarters of easy markets the net increase in the aggregate outstanding exceeded the increase that took place in either of the first two quarters of 1953. This seems to suggest that as we moved from early 1953 into the following six quarters, there were relatively equal but opposite movements of the demand and supply functions. If supply alone had increased, we could have experienced lower interest rates and unchanged quantities of securities and mortgages marketed only if the demand curve were perfectly inelastic.

4. In the flow-of-funds accounts, both ours and the Board's, the banking system also includes the mutual savings banks, the Postal Savings System, and the Treasury monetary funds. For our purposes in this paper, it proved more useful to use a truncated version of this sector.

Similarly if demand had decreased, while supply remained constant, we could have experienced the results we did only if the supply curve were perfectly inelastic. It is unlikely that either of the functions were, in fact, perfectly inelastic.

We may argue similarily, without denying the possibility of a decrease in supply in 1955, that the increase in the volume of mortgages and securities marketed plus the rise in interest rates in 1955 indicates that a change in demand was probably the dominant factor.

It seems clear that the expansion in the market supply in 1955 was dominated by the increase in mortgages outstanding, which rose from an average of $2.8 billion per quarter in the first two years to $4.1 billion per quarter in 1955; and by the net flow of government securities from the Treasury and banking system from an average of $0.2 billion to $1.8 billion per quarter in the same periods. The increase in the net flow of Treasury securities was the consequence of the heavy net sale of approximately $1.8 billion per quarter of these securities by the commercial banks. This presumably reflects the withdrawal of the banking system from the securities market so that they might service their more traditional and more profitable markets more adequately.

When we examine the quarter-to-quarter movements, we should bear in mind that securities and mortgages are sold in a market with a very well-developed communication system. Consequently, we should expect a spacing of competitive issues that would tend to even out the total flow of new issues into the market. To some extent this should result in offsetting peaks and troughs in the net issues of various instruments. This is precisely what we find in a number of instances.

In only three of the quarters under survey were the movements in the flows of corporate and Treasury securities in the same direction. It almost seems as though the issuers of corporate securities not only took cognizance of the plans of the Treasury, but those of the banking system as well. With respect to the movements in the flow of corporate securities and mortgages, the period is cut almost cleanly in half. Except in the last quarter of 1953, all changes in the net flows of these two instruments were in the same direction in the first half of the period. In the second half of the period the net issues of corporate securities and mortgages moved in opposite directions—without exception. Every single decrease in the net issue of corporate securities is matched by an increase in the net issue of mortgages, and every increase in the net issue of corporates is matched by a

decrease in the net issue of mortgages. However, it may be noted, the periods during which the inverse relationship between these instruments does and does not exist do not correspond to the tight and easy market periods.

There are grounds, though, for doubting that the corporate securities and mortgages are in as direct competition as the above might imply. The bulk of the increase in mortgages is absorbed by financial institutions.[5] Only a few of these also deal extensively in corporate securities. While the pattern of acquisitions of corporate securities by financial institutions is similar to the flow of these securities into the market, the movements are considerably damped. While the bulk of the variations in the issue of mortgages is absorbed by financial institutions, the bulk of the variations in the issue of corporate securities seems to be absorbed outside the institutional sphere. Thus any competition that may exist between these two types of instruments is more indirect than direct.

The relationship between mortgages and Treasury securities is not very striking. They move in the same and opposite directions almost at random.

Since the quarterly data on the issue of state and local governments securities are not very good, there is little to be said about them. On a semiannual basis, however, tax exempts seem to get squeezed out of the market a little when interest rates rise.

When we turn from the net issue of mortgages and securities to net acquisitions by financial institutions,[6] somewhat different patterns emerge. This is to be expected. The portfolio of each type of financial institution tends to reflect, among other things, the pattern and secular change in the pattern of its liabilities and the interpretations of these liabilities by the institutions. The acquisitions, in turn, tend to reflect these secular influences as modified by cyclical and seasonal influences.[7] The result is a tendency to specialize in one or another of the financial markets. In the period with which we deal, specialization can be seen, for example, in the predominance of corporate securities and mortgages in the transactions of life insurance

5. This phrase is used here to embrace all transactors included in the Federal Reserve Board flow-of-funds banking, insurance, and other investors sectors with the following exceptions: (1) The Federal Loan Banks are always included in the other investors sector here. (2) The accounting vivisection in the banking system which removes the Treasury security portfolio of the Federal Reserve and commercial banks from the banking system.

6. It is well to remember the definition given in footnote 5.

7. The timing of the acquisitions is also affected by the taking down of commitments, particularly in mortgages.

companies and in the predominance of mortgages in the transactions of the mutual savings banks and saving and loan associations.

A consequence of the differences in practices is that there were marked differences in the proportion of each type of instrument issued that were absorbed by financial institutions. On the whole, whether or not the banks are treated as buffers on the Treasury security market the financial institutions, as a group, absorbed slightly over 60 per cent of the net issues of mortgages and securities. In contrast with the market as a whole, where the increase in Treasury securities outstanding (adjusted) contributed significantly to the increase in the net issue of instruments in 1955, financial institutions decreased their holdings by approximately $0.3 billion during that year. The institutions seemed to have played their major role in the mortgage market where they absorbed 85 per cent of the increase in outstanding over the three-year period. Their net acquisitions rose from an average of slightly over $2 billion per quarter in 1953 to almost $3.5 per quarter in 1955. On the other hand, they absorbed only 62 per cent and 45 per cent of the net flow of corporate and municipal securities respectively.

There was a downward drift in the net acquisition of corporate securities. With two exceptions, in each quarter of 1954 and 1955 net acquisitions were about $100 million less than in the same quarter of the preceding year. The only major exception occurred in the last quarter of 1955 when net acquisitions rose to $1.6 billion, the highest figure for any quarter in the three-year period. Except in the first and third quarters of 1954, net acquisitions of tax exempts by financial institutions never rose as high as $1 billion and in the last quarter of 1955 actually fell to $0.1 billion. There seems to be a seasonal in the net acquisitions with a peak in the first quarter, a secondary lower one in the third quarter, and a yearly low in the last quarter.

It is not surprising to find that the relationships between the net acquisitions of mortgages and the various types of securities by financial institutions are somewhat different from the relationships that exist between the net issues of these instruments. We do find again the inverse relationship between the flow of corporate and Treasury securities, although the movements are damped considerably. Something new appears in the parallelism between net acquisitions of state and local government securities and Treasury securities.

The lack of relationship between the net acquisitions of corporate

securities and mortgages is a reflection of the contrast between the stability of the proportion of net mortgage flows absorbed by financial institutions which varied between 77 per cent and 91 per cent, and the instability of the proportion of corporate securities absorbed by financial institutions, which according to the available statistics varied between 35 per cent and 104 per cent. It is also a reflection of the fact that the timing of acquisitions in mortgages is determined by the taking down of commitments rather than the net increase in mortgages outstanding.[8]

We would have liked to examine the relationships which we have touched upon more fully. Unfortunately there was neither the time to work on the problems nor to present the results. In other words, there has not been time to digest fully the data that have been produced. It is clear, however, that the quarterly flows of funds in the capital market are not mere miniatures of the annual flows. They live a life of their own, influenced, to be sure, by seasonal factors, but also reflecting basic market adjustments which tend to be hidden in annual data but which must be examined for a fuller understanding of the dynamics of the capital market.

8. See S. Klaman, *Mortgage Companies in the Postwar Capital Market*, where the seasonal fourth-quarter peak in mortgage acquisitions by life insurance companies is explained by the acquisition of large blocks of mortgages by life insurance companies from the mortgage companies in fulfilment of their commitments to the latter. Since mortgage companies like other secondary financial intermediaries are not included in flow-of-funds statistics among financial institutions, these transactions are not netted in aggregating mortgage acquisition by all financial institutions.

FINANCIAL PROBLEMS OF UNDERDEVELOPED COUNTRIES

GENERAL PROBLEMS OF FINANCING DEVELOPMENT PROGRAMS*

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ECONOMIC DEVELOPMENT is a complex process that involves much more than the establishment of a few enterprises using modern methods of production. Economic development, if it is to be meaningful, must be accompanied by new attitudes toward production, consumption, saving, and investment. In brief, economic development requires the emergence of a scale of social values that encourages enterprise and innovation and stimulates expansion and growth. For this reason many of the difficulties encountered in development may not be economic at all, but sociological; and because they are sociological, the difficulties may be stubbornly resistant to purely economic measures to stimulate development. With this qualification, it may be said that in most underdeveloped countries the inadequacy of resources—the inability to finance the necessary level of investment—is the principal economic limitation on the rate of development.

RESOURCES FOR INVESTMENT

An underdeveloped country is a low-income country. In such a country, aggregate savings are too small for the level of investment necessary for a steady rise in productive efficiency. In India, for example, net savings in the years prior to the first Five-Year Plan were of the order of 4 to 5 per cent of national income. This was apparently enough to provide the tools and equipment to enable the growing population to carry on production in much the same way and with approximately the same productive efficiency as in the past. With the completion of the first Five-Year Plan, net savings in India

* This paper by E. M. Bernstein and the following papers by Gardner Patterson and Arthur I. Bloomfield, with discussions by Robert L. Sammons, Gordon Keith, and P. J. J. Pinto, were presented at a meeting of the American Finance Association in Cleveland on December 27, 1956. The program was under the chairmanship of Clay J. Anderson Federal Reserve Bank of Philadelphia.

may have risen to about 6 or 7 per cent of national income. This is, of course, a very considerable improvement. It still provides relatively little in the way of resources for creating an expanding economy.

It is characteristic of underdeveloped countries that their level of investment is inadequate for imparting the momentum of steady growth in productive efficiency that is essential to a progressive economy. The fact that some underdeveloped countries find it necessary to undertake development programs to stimulate economic growth is evidence that their economies do not have adequate momentum for progress. These development programs invariably call for a large expansion in investment, often in vast projects to provide social capital for a modern economy. This social capital is intended to open the way for additional investment in agriculture and industry and a corresponding increase in production in these fields. Unless the development program does result in increased investment in agriculture and industry, it will not generate momentum for economic growth.

Most problems encountered in financing development programs in underdeveloped countries arise out of the fact that they call for a large and rapid increase in resources to be devoted to investment. There is no method other than through capital inflow by which a country can quickly secure a large increase in resources for development. For most countries, capital inflow on a business basis is likely to be quite small under present conditions, unless the capital is to be devoted to direct investment in certain export industries. In particular, it is difficult to secure private funds in foreign capital markets for financing the construction of transport and communication facilities, irrigation, power, and similar public works and public utilities. As such investment is basic to any development program, the loans of the World Bank, many of which are for such purposes, are of special importance for financing development.

Despite popular views to the contrary, there is a limit to the extent to which economic development can be hastened by saturating an economy with foreign capital. The fact is that capital inflow is not always nor entirely a satisfactory substitute for domestic savings, particularly if the amount of foreign capital is very large relative to domestic savings. A development program will be more effective if a considerable part of the resources for investment are provided from domestic savings; and a sound development program should be concerned with encouraging domestic savings to finance a

growing share of the investment necessary for economic development. Along with the growth in domestic savings, there must be a corresponding stimulus to enterprise in order to use these resources for domestic investment.

The purpose of investment is to raise productive efficiency and to increase output. To achieve this objective, it is essential to use the resources available for investment in those fields in which they can be most effective in increasing production. In underdeveloped countries, governments are likely to have much better access to domestic savings and foreign capital than is private enterprise. Unless arrangements are made for allocating resources to the private sector for investment in agricultural and industrial enterprises, the public investment in irrigation, power, and transport facilities will not be adequately used in production. In an economy desperately short of resources for development, the failure to provide the means for expanding investment in the private sector will result in serious waste of capital in the public sector. As a practical matter, the problem of securing resources for investment is most acute in agriculture and in smaller scale industry.

The principal problems of financial policy that confront the governments of underdeveloped countries arise out of the need to limit the size and scope of development programs to the availability of real resources, to increase the amount of resources for investment by stimulating additional capital inflow and encouraging domestic savings, and to allocate the available resources between the private and public sectors and among different fields within the private sector in a manner that will result in the greatest expansion in production. Such difficult policy questions as deficit financing and credit control arise out of the scarcity of resources for development and the need to use these resources economically. This paper is not directed toward questions of fiscal and monetary policy, but to the basic problems of financing development that underlie the need for sound policy.

Capital Inflow and the Domestic Economy

Foreign investment has been an important factor in economic development for a century or more. In many countries, it has contributed to the building of a modern sector, of more or less limited importance, in an economy that has remained otherwise underdeveloped. Thus, it is possible to find a modern commercial and banking sector in the Far East, or a modern industrial enclave in

Latin America, even though these have remained low-income economies. In fact, railroad transport and occasionally other public utility services in some underdeveloped countries may not be much below the standards of the high-income countries. In a few countries, of which the United States and Canada are conspicuous examples, foreign investment has contributed to the development of a very productive, high-income economy.

There is a basic difference between the development of a modern sector within an underdeveloped economy and the development of an conomy using modern methods of production throughout the vast range of activities in which it is employed. A modern sector of limited size and scope can be developed by direct foreign investment without the participation of local enterprise and local capital. A modern economy can be developed only with very wide participation by local enterprise and local capital, although it can benefit enormously from foreign capital and technical assistance. One of the most encouraging aspects of the present concern with economic development is the wide recognition given to the responsibility of countries for taking the initiative in their own development.

An inflow of foreign capital increases the amount of investment that a country can undertake. At the same time, it necessitates adjustments within the economy to enable the capital inflow to be used in expanding investment. If the additional investment is largely in the form of imported equipment, less adjustment is needed in the domestic economy. On the other hand, if the additional investment is largely in the form of domestic expenditure (e.g., for construction), it will be necessary to shift labor to the investment industries. To do so wages will be bid up and the prices of domestically produced goods will rise. At higher costs and prices, exports will fall off and consumption of domestically produced goods will be partly replaced by imports. In the end, the rise in domestic costs and prices will be such as to induce a sufficient decline in the supply of exports and the demand for domestic consumption goods to permit a shift of labor to the investment sector equivalent to the increase in home investment.[1]

1. This analysis assumes that a country has a fixed exchange rate with international payments (on current and capital account) in balance without imposing import restrictions prior to the additional inflow of foreign capital. Where a country has a fluctuating exchange rate, the increased capital inflow will result in an appreciation of the exchange rate and the adjustment to the additional inflow of foreign capital will be made partly through a rise in domestic prices, partly through a fall in import prices. Where a country has a fixed exchange rate, but has been imposing import restrictions, so that the market prices of import goods are considerably above the level that would be determined by their landed cost, the adjustment to the additional inflow of foreign capital will largely be made through a fall in the market prices of import goods rather than through a rise in domestic prices.

Thus, an inflow of foreign capital necessitates an expansion of output in the investment goods industries relative to the export and consumption goods industries; and a corresponding expansion of consumption of import goods relative to home goods. With a *moderate* inflow of capital, a very small rise in wages and domestic prices would be sufficient to induce such a shift in the pattern of domestic production and consumption. On the other hand, with a *large* capital inflow, the process of adjustment may be difficult. If domestic consumers do not have a high elasticity of substitution of imports for domestic consumption goods, the rise in wages and domestic prices will have to be markedly higher and the shift in the pattern of domestic production will be in larger part away from the export industries to the investment industries.

The shift in the pattern of domestic production and consumption caused by a large capital inflow may result in unexpectedly high costs of adjustment if consumption of domestic goods cannot be easily replaced by imports. One difficulty is that if wages rise considerably in response to an increase in home investment, the increase in real investment may be disappointingly small relative to the increase in the capital inflow. The phenomenon so frequently noted, and so often misunderstood, of the large increase in consumption of import goods following an inflow of capital or economic aid, is part of the process of freeing labor for home investment. The failure of investment to increase in real terms as much as one would expect is a reflection of the high cost of adjusting to a large and sudden inflow of capital or economic aid.

Over the longer period, there is the additional difficulty of reversing the process of adjustment. When capital inflow declines relative to domestic output, wages will have to rise less, relative to productivity, than in other countries. If there is insistence on an excessive level of real wages, it will be difficult for the economy to induce the necessary expansion of the export industries and the domestic consumption goods industries which compete with imports. Unless such an adjustment is made, the economy will be confronted with a balance of payments problem and unemployment. In brief, a large capital inflow requires large adjustments—first to the capital inflow, then to its decline—and large adjustments are difficult to make and not without some cost to the economy.

The conclusion is not that capital inflow is undesirable. In fact, capital inflow is indispensable to development, unless living standards are to be depressed to a dangerously low level. Nor is there any implication that the total amount of foreign investment is adequate

to the needs of underdeveloped countries. On the contrary, the amount of foreign investment is far too small and efforts should be made to increase it. The three points that require emphasis are: first, that capital inflow can make a positive contribution to development if the country adjusts the economy to the efficient use of additional investment; second, that a moderate but steady inflow of capital is more desirable than a massive capital inflow which begins suddenly and ends suddenly; and third, that capital inflow is more effective when it is a supplement to domestic savings rather than the primary source of real resources for development.

Encouragement of Domestic Savings

The rapid increase in investment in an underdeveloped country must involve some rise in prices and wages in the industries most affected by the development program. The rise in prices and wages will be far less if the investment is financed out of domestic savings rather than capital inflow. The aggregate demand for domestic output is increased by additional capital inflow, except to the extent that it is accompanied by increased imports of capital goods. On the other hand, aggregate demand for domestic output is not increased by additional savings, as the increase in the demand for investment goods is offset by the decrease in the demand for consumption goods.

No one disputes the desirability of increasing domestic savings as part of a program for financing development. There is a tendency, however, to underestimate the amount of savings that can be secured in low-income countries even with present levels of income. At the same time, there is a tendency to overestimate the amount of savings that will be forthcoming when incomes rise in the course of development. The amount of savings is not independent of the environmental conditions under which savings are accumulated. The willingness of people to accumulate savings depends not only on the size of their incomes, but on local customs regarding spending and saving, and on the attractiveness of savings in comparison with spending. The creation of new standards of spending and saving is essential to economic development.

One important deterrent to personal saving is inflation. Most people, particularly savers of small amounts, have no satisfactory means of protecting their savings from depreciation due to inflation. When prices have risen steadily for a decade or more, the will to accumulate savings in the form of deposits, government bonds, or life insurance is undermined and eventually destroyed. Once assur-

ance is given against loss from inflation, the will to save can be quickly restored. In Israel, for example, the recent introduction of special schemes linking the value of savings to the cost of living or the dollar exchange rate attracted a large amount of savings funds, much of it new. While there are serious objections to the widespread use of such linking devices, their popularity with savers is indicative of the destructive effect of inflation on the will to save.

It is possible to increase saving to some extent by offering savers the opportunity to acquire more attractive savings assets. In India, in the Philippines, and in other countries, savings or development bonds are available in small denominations. In Brazil, a proposal has been made for establishing an investment trust issuing shares with a minimum return guaranteed by the government and the privilege of participating in the profits of the companies financed by the Development Bank. If inflation were avoided and more attractive savings assets provided, people might be induced to hold other savings assets instead of hoarding gold, silver, or foreign exchange, a form of saving which provides no resources for development.

There is a tendency to underestimate the beneficial effects of a high rate of interest in underdeveloped countries. A high rate of interest will induce the public to increase its savings and to hold more of its savings in the form of deposits and bonds, rather than in hoards of precious metals or foreign exchange. Furthermore, a high rate of interest will encourage a more economical use of capital and thus diminish the deficiency of resources for development. Finally, the measures taken by the monetary authorities to restrain the excessive supply of credit will be more effective if they are accompanied by high interest rates that restrain the demand for credit. Although the government will also have to pay a high rate of interest for its investment, the higher interest charges should be included in the price of the services sold by government enterprises. It is reasonable to pay a high rate of interest to attract savings, for savings have a high value in an underdeveloped country.

In the high-income industrial countries, savings of business enterprises provide a large part of the resources for investment. In the United States in 1955, the undistributed profits of corporations and capital consumption allowances of private business provided more than five-sixths of the funds to finance gross business investment (i.e., gross private investment less residential non-farm construction). In an underdeveloped country, business enterprises should be encouraged to increase their savings and to finance more of their

own investment needs. Price control and other devices that keep profits below the proper level for an uninflated economy and depreciation allowances that do not provide for replacement of capital assets at current prices tend to diminish business savings. It would also be desirable to provide more favorable tax provisions for retained than for distributed profits.

The public finances, budgetary and non-budgetary, of the central and local governments, can be used to increase savings in underdeveloped countries. Every reduction in ordinary public expenditure will release equivalent real resources for development; every increase in tax revenues will provide some additional savings for investment. Outside of the budget, a system of full cost pricing for the services of public enterprises (and privately operated public utilities) could add materially to the savings of the country. The extension of social security could be used to encourage larger savings by and for wage-earners as their incomes increase. A social security system can yield considerable savings if it is financed by receipts from employers and employees, if the number of persons participating in the social security system grows steadily, and if the benefits take the form of old age, disability and survivors payments that will be disbursed in the future.

The opportunities for increasing domestic savings at present levels of income in underdeveloped countries are limited, although not negligible. As incomes rise with economic development, the savings ratio can be further increased. It is by no means clear that any substantial part of the increase in incomes will be saved unless steps are taken to bring this about. The increase in incomes will accrue in large part to persons of very modest means. Their inclination will be to use the increase in incomes for spending and saving in about the same proportions as their present incomes. There is no way of isolating the increase in incomes to be taxed at higher levels than the previous incomes. The measures suggested above can be put into effect gradually, as incomes rise, in order to encourage additional savings to finance development.

Allocating Resources for Investment

Because underdeveloped countries are invariably short of resources even for the most important projects they are capable of undertaking profitably, it is particularly important that the limited resources should be invested in those fields in which they will make the greatest contribution to production. In an underdeveloped coun-

try, the enormous investment in irrigation, power, and similar projects is intended to provide the basis for additional investment in agriculture and industry. In a sense, much of the investment in supplying the basic utility services may be wasted unless there are complementary investments in agricultural and industrial production that use these services.

In many underdeveloped countries an exceptionally large proportion of the total resources available for development is used for public investment. Comparatively little of these resources are used for private investment, particularly in small-scale agriculture and industry, even though these constitute the major fields of employment. The tentative framework of the second Five-Year Plan of India provides for total net investment of 56 billion rupees of which only 40 per cent is in the private sector. Less than 8 per cent of the total resources are to be used for private investment in industry and mining and less than 4 per cent for private investment in agriculture. Half of the investment in the private sector is to be in construction.[2]

Conceivably, this allocation of resources for investment corresponds reasonably well to the needs of development in these countries. Nevertheless, it is difficult to escape the feeling that too little of the available resources is being used for private investment in agriculture and industry. The failure to allocate more resources for such investment may indicate that small scale agricultural and industrial producers are lacking in enterprise; or it may indicate that savers and savings institutions are unwilling to take the risks involved in making loans to small producers. On the other hand, the very limited amount of private investment in agriculture and industry may indicate that too much of the resources available for development are being reserved for investment by the government.

The government has great advantages in acquiring whatever resources are available for public investment. It has direct access to these resources through the taxing power, the profits of public enterprises, and the proceeds of various special funds. It has indirect access to these resources through borrowing from the public and the banks. The securities of the government are gilt-edge, with trustee status; and through control of the monetary system, the government can channel to itself the major part of the savings that take the form

2. A strikingly similar distribution of resources for investment is found in Israel. Of total gross investment of 605 million Israeli pounds in 1955, about 40 per cent was financed with private resources. Less than 8 per cent of the total represented private investment in industry and nearly 5 per cent represented investment in agriculture. About 42 per cent of all private investment was in residential housing.

of an increase in cash balances. Capital inflow, other than direct investment, is likely to be in loans to the government or to government enterprises. Unless the government exercises discretion and restraint in public investment, the shortage of resources for development will fall excessively on private investment. The consequence may be to retard development for lack of complementary investment in agricultural and industrial production.

Most underdeveloped countries need better institutional facilities for allocating resources for private investment. It is possible to encourage a more flexible use of bank resources for private investment within the framework of a proper credit policy. In addition, new institutions are needed which are better suited to finance private investment in agriculture and industry. The Philippines, for example, have been successful in providing credit for small scale agricultural production through rural banks. Loans are available to small land owners and to responsible tenants at a cost comparable to that which commercial banks charge for loans to large-scale agricultural producers. In India, the need to make more adequate provision for industrial credit has been recognized by the establishment of the Industrial Finance Corporation by the Central Government and similar institutions by some of the states. These institutions have helped in financing private investment, although their operations remain very small in comparison with the needs of private industry.

The greatest deficiency in the institutional arrangements for financing private investment is undoubtedly in the provision of equity capital. Most underdeveloped countries are not yet ready for investment banks and security markets on the model of the high-income countries. The creation of an investment trust under sponsorship of a development bank, as proposed in Brazil, could stimulate popular interest in the purchase of participating securities which provide equity capital. The recent establishment of the International Finance Corporation as an affiliate of the World Bank will undoubtedly facilitate the provision of resources for investment in private enterprises in underdeveloped countries. In this way, it may be very useful not only in increasing aggregate investment, but in securing a better allocation of the resources available for development.

Concluding Remarks

The financial problems of underdeveloped countries have their origin in a shortage of resources for financing the development pro-

grams that they propose to undertake. Unless additional resources can be acquired to meet this deficiency, it will be necessary to limit the development program. In most instances, the deficiency of resources cannot be overcome, although it can be alleviated, through capital inflow. Because of the shortage of resources, it is necessary to encourage an expansion of domestic savings and to facilitate the most effective use, in public and private investment, of the limited resources that are available for development. Fiscal and credit policy are of special importance in the solution of many of the problems of financing a development program. Unless the financial problems are met through appropriate policy, the country will not succeed in developing the economy. An attempt to carry out the development program without regard to the appropriate fiscal and credit policy will inevitably lead to inflation and balance of payments difficulties.

IMPACT OF DEFICIT FINANCING IN UNDERDEVELOPED COUNTRIES: SOMETIMES NEGLECTED ASPECTS*

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I

FOR PURPOSES of this paper, deficit financing will be defined as a net increase in the amount of money in circulation, such increase being the result of conscious governmental policy designed to bring about economic activity that the officials believe desirable and that otherwise would not have taken place. (Thus, it is assumed deficit financing is not offset by taxation, tighter bank credit, etc.) The underdeveloped countries shall be considered nations with low per capita outputs and incomes, a slow increase in productive efficiency, a low level of industrialization, and in which the purpose of deficit financing is to secure a rapid economic development; that is, drastically and quickly to alter the economic structure.

Many questions can be asked under the topic assigned me. Most of them not only have been asked but also have been given convincing answers. I shall therefore not here attempt anything like a complete or well-rounded treatment of the subject nor a synthesis of what others have said. Rather, concentrating on some of the less commonly treated—though not ignored—issues, I will look only at certain restricted aspects of the following two interrelated queries: (1) What are the limitations on deficit finance practices putting unemployed factors of production to work, that is, increasing net production of goods and services? and (2) Is deficit financing an effective way of increasing savings, that is, of transferring real resources from consumption to the investment programs desired by the government? For the most part, my concern shall be primarily with the short and medium run.

* NOTE: As given at the meeting in Cleveland, some casual attention was paid to comparing the impact of deficit financing in underdeveloped countries with its effects in developed countries. I have met the editor's request for condensing the papers as delivered orally by deleting all references to the more economically advanced nations.

I hope that a few points have been clarified and others corrected as a result of Professor Gordon Keith's criticisms given at the meetings. I have not, however, met his basic criticism that I "praise inflation with too faint damns."

II

Following Professor Nurkse's pioneering work,[1] it has become fashionable for less discerning observers than he to regard the underemployed workers of the underdeveloped countries as a huge reservoir easily tapped for the capital formation so urgently desired. That there is much such underemployment by western standards in these areas is evident; the question before us, however, is to what extent deficit financing is a feasible method for bringing these resources into use in the sense of increasing total net production.

At the outset, let us explicitly recognize that not all types of labor are likely to be unemployed in these countries. Indeed, skilled labor of all kinds—and especially those skills most needed for economic development purposes—are almost always scarce and therefore the most we can hope for from a policy of deficit financing with respect to these resources is to bid them away from their present occupations into more productive ones. There seems likely to be some net general inflationary effects in such bidding but the amount will probably be so small as to be uninteresting from our point of view. Much more serious are the severe limitations of the bottleneck variety which the shortage of engineers, managers, entrepreneurs, foremen, operators of complex equipment, etc., place on the efficient use of unskilled workers, whether in the new government projects or in the private projects from which the skilled workers have been enticed. In the absence of appropriate numbers and kinds of skilled workers the gross output of the unskilled labor transferred to new jobs may be exceedingly small; and the danger of inflation from their employment correspondingly large. The underdeveloped countries can increase their supply of skilled labor, perhaps using deficit financing for this purpose, but this is a long process normally and, on the basis of recent history, perhaps it can be safely assumed that the program of economic development fired by deficit financing will not be postponed until adequate additional supplies of such skills are available.

With respect to unskilled labor, the situation seems to be quite different. By offering high enough money wages, a substantial amount of such labor, especially from the rural areas, probably can be obtained without directly reducing the production of the sector of the economy from which these people are drawn. But an aspect of this that is sometimes given inadequate attention is that the value of the goods and services these additional labor resources are cre-

1. Ragnar Nurkse, *Capital Formation in Under-developed Countries* (Oxford, 1953).

ating must be offset, for some time and in no small part, by the additional consumption this transfer of occupation entails. Not all of the expanded production is net. In most underdeveloped areas such a change in occupation will involve a great many changes in area of residence, more particularly from villages to urban areas or to new dam sites, new highways, etc. Such changes will often bring about a welcome relief from crowded housing conditions in the villages, but it will also necessitate some additional housing in the new areas of residence. Simple, rudimentary, and primitive as such housing may be, it can represent a substantial offset for a time to the value of the new output of the previously underemployed workers. Probably a much larger offset will be the value of the additional consumption—food, clothing, entertainment—which these workers will demand as a price for leaving their former work and homes. In almost all cases the *quality* of consumption, and the real cost of producing it, tends to be greater for workers who are physically uprooted than it was during the previous period. In assessing the importance of this, it must also be remembered that while the economic planner may find what he regards as a huge amount of underemployment in these countries and, indeed, may find that the marginal productivity of a significant proportion of the labor force is zero, or possibly in extreme cases even negative, this is not the way the individual worker sees it. As an individual he does work, he does produce something, and what the outsider may regard as underemployment has probably held through all living memory and any change therefore is likely to have a cost in the improvement of that particular individual's immediate economic well-being. Furthermore, the fact that those remaining in the village will have more spacious housing, fewer mouths to feed out of a given food supply, etc., is no more likely in an underdeveloped country than in ours to be regarded as important compensation by the member of the household who leaves. Nor is it possible for the departing member to take with him any significant proportion of the goods which he might have consumed had he remained. It seems to follow that whereas deficit financing can doubtless bring some underemployed unskilled labor resources into net additional and productive employment, that is, can increase gross production, there are for a time large direct and immediate offsets. Moreover, the offsetting goods themselves are often in short supply and likely to be so for some time inasmuch as the immediate object of making use of the unemployed labor resources is assumed here to be the creation of productive capital

goods rather than consumer goods, durable or otherwise. These offsets, it must be noted, are not included in any increase in demand occasioned in the economy as a whole as a consequence of the higher monetary incomes growing out of the deficit financing.

Increasing output by deficit financing requires not only the putting to use of unemployed or underemployed labor but also the finding of machinery, equipment, and raw materials for the latter to use. For the sake of brevity, let us grant that in the underdeveloped countries a large part of the raw materials are available and would otherwise be unused, although I think experience shows that the elasticity of supply of many such goods—cement, steel, timber, etc., —is often far less than was anticipated when the development programs were first embarked upon. In some cases, it is true, supplies of some of these goods may be had for development purposes by reducing exports of them but this rarely is a satisfying answer for obvious reasons.

It can be, and has been, argued that the machinery and tools required can be of the most rudimentary sort and the making of them constitute the first order of business of the previously underemployed labor. There are clearly some possibilities here and, in my view, the more labor-intensive the investment project is, and the production process resulting, the better in most cases. At the same time, it must be noted that the inflationary effect of such a policy is likely to be great since workers with low living standards tend to have high marginal propensities to consume, and if they are paid money wages while making the tools in order to make the development projects the inflationary process goes on that much longer. Moreover, I fear that the possibility of so using labor to any great extent is largely of interest to academics and impotent advisers for I know of no case in recent years where, once a decision to embark on a development program has been undertaken, and once the weapon of deficit financing is available, governments have been able to restrain themselves from attempting to use fairly elaborate tools and machinery from the outset. Rarely indeed are there adequate supplies of such tools and equipment, or of facilities for producing them, lying around idle in the country. These are not unemployed or underemployed resources and their scarcity constitutes a serious bottleneck for the effective use of the unskilled labor. As with skilled labor, such capital items can, in many instances, be bid away from other uses and this may, from the whole economy's point of view, be an improvement; one thinks of tools, skilled labor, and scarce

raw materials being taken from luxury urban housing to help build dams. But one cannot count on every such diversion being an improvement; and, as Dr. Bernstein argues in the preceding paper, private investment is often required if the government investment is to be successful. An alternative is for the government to import new tools and machinery and this, indeed, is frequently attempted. There seems to be general agreement, however, that underdeveloped countries engaged in development programs are likely for other reasons as well to be suffering acute foreign exchange difficulties.

In sum, the possibility of deficit financing bringing unemployed resources into new production seems likely to be limited largely to unskilled workers in the underdeveloped countries and, unfortunately, even here the net increase in production for capital formation purposes may be relatively small for a not inconsiderable period because of the increase in consumption such employment entails. On top of this are the bottleneck limitations imposed by the fact there are usually few, or no, unemployed skilled workers, tools, machinery, and, often, raw materials, needed to complement the unskilled workers' efforts.

III

Let us now turn to the question of the extent to which increased savings can be induced or forced by deficit financing practices. That is, whether deficit financing yields some net increase in current production or not, is the net additional purchasing power the government can create an effective device for transferring real resources from consumption to investment in the underdeveloped countries?

In those underdeveloped countries a large part of which has not yet been monetized there may well exist a large untapped savings potential. During the period the barter aspects of economy (usually involving especially the rural areas) are being replaced by monetary exchanges, even very poor people apparently are willing to build up relatively large stocks of cash. If, as is typical, the rural areas constitute a large part of the economy, the total savings, and so the total new investment which can initially be made without inflation, may be impressive. Indeed, it is possible that it may be enough, provided the choice of investments and their execution have been inspired, to result in a sufficient increase in the total product to permit a taxing away in one form or another of a sufficient amount of the *subsequent* increase in total production to carry out further investment and still provide some increases in consumption. Thus

might the vicious circle of poverty begetting poverty be broken.

If this chance to save during the monetization process has been missed and deficit financing is continued after cash stocks have been built up as much as the people voluntarily want them to be, then what?[2] Once monetized, the money-income ratio in underdeveloped countries tends to be low; that is, the economies are very sensitive to deficit financing. In other words, the continued even moderate deficit financing tends to be inflationary and so the question becomes: Is inflation a feasible way of increasing (i.e., forcing) savings in these areas? To this no a priori answer can be given. It depends very much on the structure and organization of the particular economy, on the social and political conditions then ruling, on whether the crops during this period have been especially good or bad or just average, etc. Here we can look at only one or two of what seem to be rather interesting and sometimes neglected aspects of all this.

So long as the deficit-finance-inspired inflation is relatively mild, the price rises may well, as Professor Lewis has so eloquently argued,[3] serve to increase the profits of the industrial and mercantile classes and by so doing increase their savings. Indeed, if the entrepreneurs now hoard this cash, or pay off past bank loans, or buy government bonds, the inflation tends to taper off very quickly and the inflation has induced the required savings for the planned investments. This is a relatively happy state of affairs. But if, as is at least equally likely, this group now spends their funds, they will feed the inflation. In either event, this situation does, of course, involve, indeed it is made possible by, a redistribution of income against other sectors of the economy, particularly wage-earners and farmers. Nonetheless, if the entrepreneurial classes and/or the government make appropriate investments with the new funds, in the longer run labor productivity will presumably increase and real wages improve. Clearly there are some possibilities for economic development here.

But the possibilities are limited ones. In the first place, the redistribution of income initially involved may run counter to the economic welfare objectives of the government and thus be unacceptable and so offset by the government. If the general inflation

2. Even after the economy has been monetized, some savings might be garnered via deficit financing and without inflation if the increase in money in circulation is limited to something less than the increases in productivity; but to so gear the new cash creation is very likely beyond the administrative capabilities and to so limit it beyond the firmly held desires of the bureaucracy of most underdeveloped countries.

3. W. Arthur Lewis, *The Theory of Economic Growth* (Homewood, Ill.: Richard D. Irwin, Inc., 1955).

resulting from the deficit financing becomes more serious it may lead the manufacturing and merchandising sectors of the economy to hoard their output—engage in inventory accumulation in general—in anticipation of further price increases. While this is a form of saving induced by inflation, it is not normally of the sort which facilitates the nation's economic development program. Quite the contrary, such action not only tends to reduce the physical capabilities of other sectors of the economy to produce—and so makes genuine saving, as distinct from non-consumption by others, more difficult—but also, once known, tends to increase tensions among the various groups of the society, some such tensions already being the inevitable price of rapid and drastic change of the economic structure of the nation. If the savings of the mercantile group made possible by inflation take the still-not-rare form of jewels, gold, and other precious but in many respects economically barren forms, then added difficulties are created for the economic development program since foreign exchange is frequently one of the limiting factors of planned investments. Still and all, if the inflationary effects of deficit financing can be kept relatively mild, there may be a significant increase in the useful savings of this group.

But this is not the end of the story. There is more to be said of the reactions by the labor and farmer groups to inflation bred by deficit financing. If the labor force is unorganized, wages tend to be rigid and deficit-finance-induced inflation can well result in reduced consumption from current income, as has been assumed above. However, this will not necessarily result in an equivalent amount of forced savings. Any encroachment on the already low consumption standards of these people is likely to be offset in part through disinvestments, such disinvestment taking many forms, among them failing to maintain workers' houses and other durable personal property, and less investment in the training and education and health of themselves and their children.

But if labor is well organized, and this is increasingly the case inasmuch as frequently one of the objectives sought under a program of economic development is strong labor unions, the response to inflation is likely to be quick and strong demands for wage increases. Such increases probably will tend to lag behind price increases, but the lags have a way of becoming shorter now that the notion of escalator clauses is widely known and greatly admired. These high wages will of course hinder the transfer of real resources to the government deficit-financed investment projects inasmuch as

wage earners in countries where per capita incomes are very low tend to have a high income-elasticity of demand and a low price-elasticity of demand. Moreover, from the savings that might be forced out of the labor groups in the process must be subtracted not only the disinvestment noted above in the case of unorganized workers but also the goods and services not produced during the strikes, slow-downs, and general impairment of labor's efficiency which so often accompany these efforts of organized labor to maintain their real incomes in the face of inflation. And, as already noted, in many of the underdeveloped countries, governments are not prepared for the reasons of general welfare and political expediency to let real wages decline significantly. In many of the underdeveloped countries the numbers in the wage class are relatively small and so, even if wages are rigid, only relatively small amounts of resources can be transferred to the government's projects. All in all, for both economic and political reasons there seems little prospect for inducing any large amount of forced savings from wage earners via inflation.

In most underdeveloped countries the peasants constitute by far the largest occupational group. What are the prospects of forcing them to increase their savings by deficit financing and inflation? The answer depends, in the first instance, upon an important question of fact. If general inflation distributes incomes in favor of the peasants via higher prices for agricultural products than for other goods and services, and if this group has a higher propensity to save than the other groups from whom the income has been transferred, then inflation may increase the voluntary savings of the peasants and the total savings of the economy. But it is, I suspect, more often the case in the underdeveloped countries, especially those who export agricultural products, that inflation resulting from deficit-financed economic development makes itself felt much more rapidly and intensely on the goods the peasants buy than on those they sell. In this event, in the first instance at least, the inflation redistributes incomes away from the peasants. Now this, too, may result in some forced savings in the form of reduced consumption. But the savings may take other forms too, and perhaps less happy ones from the point of view of economic development. Farmers have shown, in times past, that they have their own ways of meeting an inflationary squeeze: hoarding of their produce. This is a form of savings of course, but it rarely contributes to increased production, its effect tending to be to raise the price of the hoarded produce which in turn permits the peasants to evade the forced savings while pushing the

entire economy on to a higher inflationary level. These are not ideal circumstances for transferring real resources to the government's investment program and, moreover, in its efforts to meet some of these problems the government may take recourse to large imports of foodstuffs and other agricultural produce. This is surely a most wasteful expedient—though it may well be unavoidable in the circumstances—and if pursued very far constitutes a large offset to the value of the hoped-for investment for which the deficit financing was employed.

An attempt to force savings from the peasants by inflation may have other undesirable and, in part, self-defeating consequences. The farmer, as well as the urban laborer, may be expected to attempt to maintain consumption by dissaving. These dissavings, frequently ignored or underestimated by those urging deficit financing, may quickly reach large dimensions. If, as is frequently the case, the farmers have been the recent recipients of some economic development efforts in the form of new machinery, improved irrigation systems, new land improvement schemes, etc., the disinvestment can easily and rapidly become a multiple of the savings the farmer is trying to avoid. Squeezed by adverse price movements, the farmer may respond by falling behind in the maintenance of his, or the community's, new tractor or combine. An attempt to save a few dollars here may quickly involve hundreds of dollars of disinvestment and, not uncommonly, disinvestment of foreign exchange items. The farmers may attempt to maintain consumption by postponing repairs on their houses and farm buildings or, more costly, by skimping in the care of their land and animals, or by mining their soil. Investments in new soil conservation techniques and in better care of animals frequently represent huge amounts during the early stages of development programs; these can quickly be dissipated. It is commonly assumed that the very high rates of depreciation on new farm equipment in the underdeveloped areas results from ignorance as to proper maintenance, but it is probably also in part the result of attempts by the farmers to avoid or offset savings being forced on them from other directions.

Parenthetically, it may be noted that while farmers, and other groups as well, under certain conditions will respond generously to patriotic appeals to make sacrifices for the economic development of their nation, such appeals tend to sound phony when the sacrifice is not something which can clearly be seen to benefit themselves, or even the nation as a whole, but rather takes the form of paying higher prices for the goods and services of other groups in the

economy, especially if these other groups have been the subject of much suspicion and distrust for generations.

Or is all this much too pessimistic? Will not the farmers caught in the price squeeze attempt to maintain their real income by working harder and producing more rather than by dissaving? One cannot rule this out. How extensively the reaction will be greater production rather than dissaving will depend in part upon whether, with given techniques, it is physically possible to expand output. In many cases, larger output will require not only greater effort on the part of its farmers but also more of such things as fertilizers and better seeds and, possibly, more equipment. Unfortunately, these tend to be precisely the things that become more difficult for the farmer to obtain as prices move against him; and so inflation may work toward reducing, not increasing, output by farmers caught in the price squeeze. Whether the farmer's response is harder work and more production will also depend in part on the extent to which he has shared in the economic development program. If economic development has largely passed him by, his self-sufficiency is still probably great and so his compulsion to increase output in the face of higher prices for the things he buys tends to be small. As his involvement in the changing economic structure increases, his dependence on non-farm-produced goods also increases and so the probability that greater pressure will be exerted on him to respond to a worsening of his terms of trade by increasing the amount of goods he has to sell. But inasmuch as his ability to increase output is conditioned in important part by nature and tends to run in a yearly cycle, a progressive inflationary squeeze will not remove the temptation, or perhaps even the necessity, of reacting to some extent by disinvesting in his equipment and other durable assets. One may also speculate that if the farmers have participated heavily in the economic development program, that in itself may be evidence that they are potent political groups and, if this be the case, they may be given an opportunity to escape from forced savings by government-sponsored additional and easy credit, support prices, outright subsidies, and so on.

From this, I conclude that the amount of increased *net* savings which can be forced or induced by inflation among the labor and farm groups, who constitute a very large proportion of the population of underdeveloped countries, is likely to be small, once the economy has been monetized and inflation has gone on long enough to be apparent to most people.

There is another side of this which strikes me as of some impor-

tance and too often ignored by economists. Peasants who find that the process of economic development has forced on them unwanted savings may be tempted to lose whatever enthusiasm for change has been instilled in them and try to return to the old ways. Since the resistance of this group to change is proverbially great in any case and constitutes one of the great barriers to economic development in many countries, any action strengthening this resistance may be exceedingly costly to a nation's future economic development. Moreover, if the farmers or workers are already living at the misery margin and are driven by their frustrated hopes—hopes of increased consumption now frustrated by forced savings—over their low threshold of despair, the costs may also include reduction—or limitation—of some of the more basic social investments: flowers around the house or hut, cleaner wells, more sanitary latrines, trees in the yard, and so on. Consideration of the importance of such behavior would lead us into realms for which the economist, qua economist, has no professional qualifications and they cannot be pursued here. But neither should the economist ignore them. If, as I suppose most of us believe, the case for encouraging economic development has importantly to do with raising man's dignity and self-respect, as well as feeding and clothing him better, economic policy which can be found seriously to threaten this final objective needs more careful scrutiny.

In the long run, of course, it is always hoped that inflation generated by deficit-financed economic development in underdeveloped countries will be self-limiting as the additional goods and services flow from the investments, and that these investments will result in substantially higher per capita real incomes. This may prove a justified hope, provided the inflation does not in the meantime reach such proportions as to result in tremendous amounts of misinvestment, waste, and acute social and political tensions.

IV

The reservations expressed here as to the effectiveness of deficit financing in underdeveloped countries as a means of encouraging economic development stem not from the fear that it will fail at first —indeed it can be a powerful and helpful too, especially in the very beginning of the program when much of the economy has still to be monetized. Nor are the reservations serious if deficit financing is restrained to amounts less than the increase in productivity each year, and if it is restricted to fields where returns are quick and

which have a large output-capital ratio: one thinks of pest control, seed improvement, improved animal care, community projects, cottage industries, etc. Its major shortcomings are rather that those using it will seriously overestimate the unemployed resources that can thus be brought into work, overestimate the net increase in production that will result from whatever unemployed or underemployed factors of production can be put to work, underestimate the cost of inflation in terms of disinvestment elsewhere in the economy, and underestimate the adverse impact of inflation on the willingness of the peoples in the underdeveloped countries to embrace economic change.

SOME PROBLEMS OF CENTRAL BANKING IN UNDERDEVELOPED COUNTRIES

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INTRODUCTION

DURING THE PAST DECADE there has been a marked proliferation and development of central banking facilities in the underdeveloped countries of the world, along with an increasing resort to the use of monetary policy as an instrument of economic control.[1] Since 1945 central banks have been newly established, and pre-existing ones thoroughly reorganized, in no less than some twenty-five underdeveloped countries[2] In other cases the powers of pre-existing central banks have been broadened. If exception is made for the non-self-governing territories, which for the most part are serviced by currency boards or their equivalents operating in the main on the basis of 100 per cent exchange reserve systems, nearly all underdeveloped countries today have central banks, most of which are equipped with the full panoply of central banking powers.

This rapid rate of development of central banking facilities has in part reflected the achievement since World War II of political independence by a substantial number of underdeveloped countries, especially in Asia and the Far East. The attainment of national political sovereignty has carried with it the right, which nearly all of the countries concerned have quickly exercised, to have and to manage national currency systems. But in large part the recent growth of central banking in the economically backward areas has also reflected a desire on the part of the governments concerned to be able to pursue a monetary policy designed to promote more rapid economic development and to mitigate undue swings in national money incomes.

1. For a fuller treatment of the matters discussed in this paper, see my article, "Monetary Policy in Underdeveloped Countries," in *Public Policy*, Vol. VII, ed. by C. J. Friedrich and J. K. Galbraith (Cambridge: Harvard University Press, 1957).

2. The countries or areas concerned are: Belgian Congo, Burma, Cambodia, Ceylon, Chile, Costa Rica, Cuba, the Dominican Republic, Ecuador, Egypt, French Equatorial Africa and the Cameroons, French West Africa and Togo, Guatemala, Honduras, Indonesia, Iraq, Laos, Libya, Pakistan, Paraguay, the Philippines, Rhodesia and Nyasaland, South Korea, South Vietnam, and Syria.

Like most central banks everywhere, the great majority of central banks in underdeveloped countries, and nearly all those established or reorganized in recent years, are fully owned by the government. Nevertheless, various administrative provisions are inserted in many of the statutes with the object of trying to secure for the central bank the largest possible measure of independence from political direction and pressures, and of freedom in formulating and implementing monetary policy, while fostering the maximum of coordination between government and central bank policies. Many of the statutes, moreover, contain provisions strictly limiting the amount of loans and other extensions of funds that the central bank might make to the government.

Many of the central banks, especially those established since 1945 with the help of Federal Reserve advisers, are characterized by unusually wide and flexible powers. A large number of instruments of general and selective credit control, some of a novel character, are provided for. Powers are given to the central bank to engage in a wide range of credit operations with the commercial banks and in some cases with other financial institutions. Broad responsibility is delegated to the central bank to manage the country's international reserves and payments. These and other powers were specifically provided in the hope of enabling the central banks concerned to pursue a more purposive and effective monetary policy than had been possible for most of the central banks that had been set up in underdeveloped countries during the twenties and thirties. Those banks had for the most part been equipped with exceedingly orthodox statutes and limited powers which permitted little scope for a monetary policy designed to promote economic development and internal stability and which were sometimes poorly adapted to the primitive financial structures of the countries concerned.

This paper will briefly survey the role, problems, and potentialities of central banks in underdeveloped countries in general, with some discussion of the methods and techniques of monetary policy that have been employed. To keep the paper within manageable limits, no attention will be paid to foreign exchange and payments policies, although these are usually administered by the central bank and are of course really part of monetary policy proper.

The Institutional Setting

Among the many institutional characteristics common to underdeveloped countries in general are some of special relevance in influ-

encing the potential role, scope, and effectiveness of central banking.

Money does not play the same pervasive role that it does in developed countries. Agricultural production tends in substantial part to be of a subsistence rather than market character. Barter transactions rather than purchase and sale predominate in many rural areas of these countries. Monetary policy thus operates within a relatively smaller area of the economy than it does in the more developed countries. Even in the monetary sector of the economy, moreover, the banking habit is not as yet widespread. Some 50 per cent or more of the money supply tends to take the form of currency in circulation.[3]

Money markets and capital markets are limited in scope or virtually nonexistent, thereby restricting the possibilities of central bank open-market operations and to some extent discount operations as well. There are few organized markets in bills or commercial paper and there is often a lack of discountable paper. Markets in short- and long-term government securities are very narrow, as are markets in corporate stock. Institutional investors, such as savings banks and insurance companies, play only a relatively small role in mobilizing and channeling the limited volume of private saving that takes place. Such saving tends in large part to be invested in forms that remain directly under the control of the savers, e.g., in inventories, foreign exchange, real estate, or one's own business.

The interest rate structure in underdeveloped countries is an unintegrated one and over a large part of the economy interest rates are relatively insensitive to the actions of the monetary authorities. Even within given sectcors or localities of the market there is often a wide diversity of rates. There is an especially wide gap between interest rates in the so-called organized and unorganized sectors of the money market. Interest rates play a lesser role than they do in the more developed countries in influencing the volume and direction of investment. In the *modus operandi* of monetary policy, the availability of credit factor is likely to be more important, relative to the cost factor, than it is in the more developed countries.

In most underdeveloped countries there is a marked lack of balance in the allocation of commercical bank credit. Commercial banks, in large part because of their concern for a very high degree of liquidity, tend to concentrate heavily on short-term loans to fi-

3. One consequence of this high degree of preference for currency is to keep down the deposit-creating potential of the commercial banks on the basis of any given increment of reserves. This may be a factor of some help to the monetary authorities on occasions when bank reserves are changing rapidly and cannot easily be controlled.

nance foreign trade and domestic commerce. Production loans to agriculture and industry, and especially medium- and long-term loans, usually constitute only a relatively minor part of their portfolios. Commercial banking facilities likewise tend to be concentrated mainly in the urban centers. Large sections of the population, especially farmers and small businessmen, cannot satisfy their legitimate credit needs through normal banking channels and must rely heavily on moneylenders charging exorbitant rates of interest. There is a particular lack of medium- and long-term credit and finance for borrowers generally, a lack which many governments have tried in part to meet by the establishment of official industrial and agricultural banks and other specialized financing institutions.

There is a tendency for commercial banks in many but by no means all underdeveloped countries to maintain the ratios of their reserves to their deposit liabilities well in excess of the legal minima, where such are imposed. This tendency reflects such factors as the lack of an adequate supply of short-term liquid assets as suitable secondary reserves, the susceptibility of the banks to large and sudden currency withdrawals, and the absence in many cases of a long-standing tradition of discounting at or borrowing from the central bank. Where the commercial banks do not rely on central bank credit to any great extent, the potential effectiveness of central bank discount policy is considerably weakened. Since the commercial banks tend, moreover, to permit their holdings of excess reserves to undergo substantial fluctuations, the exact degree of their response to any given change in their aggregate reserves is not likely to be as predictable as it is in the more developed countries where banks usually keep small excess reserves.

The role and scope of central banking in underdeveloped countries are greatly influenced by the strong development drives to which most of them are subject. These drives, superimposed upon economies of low savings propensities, low taxable capacities, and relatively inelastic outputs, make these countries especially sensitive to inflationary pressures and call for constant vigilance by the monetary authorities. They contribute to strong political pressures upon the central bank to extend credit unduly. They often make it necessary for the central bank to be more concerned with the development process, and to engage in a wider range of activities and operations, than is traditional with central banks in the more developed countries.

In underdeveloped countries there is reason to believe that the

income-velocity of money tends, in the short run at least, to be considerably more stable than in developed ones. This stems from the fact that holdings of inactive money balances tend to be relatively small or at least not to be subject to large or sudden short-run changes. Net changes in the money supply thus tend ordinarily to be more closely correlated with net changes in national money income than in developed countries. To the extent that the central bank is able to exercise a firm control over the supply of money, this relative short-run stability of velocity would be clearly a factor working in favor of the effectiveness of monetary policy. But such a degree of control is often especially difficult to attain in underdeveloped countries, quite apart from the considerations already mentioned.

Of most importance is the fact that externally generated fluctuations in the balance of payments, associated with fluctuations in world demand for their exports, are usually a major cause of changes in the money supply in underdeveloped countries. Such money supply changes are not easily subject to the control of the central bank nor can they easily be offset by central bank action on that part of the money supply which is so subject. Nor can the central bank exercise genuinely effective control over that part of the money supply which is generated by the credit which it and sometimes the commercial banks are called upon to extend to the government and to government enterprises and instrumentalities. Such credit extensions often account for a very large part of the money supply increases in underdeveloped countries because of strong development drives, inadequate tax systems, and narrow markets in government securities. Although the central bank may of course attempt to dissuade the government from pursuing policies which necessitate undue recourse to bank credit, it must in the final analysis come to the government's financial assistance, either by direct loans or by providing the commercial banks with any necessary additional reserves, if the government decides upon programs that necessitate such assistance.

It is mainly, therefore, on that segment of the money supply which is generated by the commercial banks' credit operations with the private sector of the economy—which is a relatively small segment of the money supply in most underdeveloped countries—that the central bank is able to exert its most direct influence. If an inflationary expansion of the money supply originates from an undue increase in commercial bank credit to the private sector, the central

bank should usually be able to keep such expansion in check. But in the more common case where the money supply tends to rise unduly because of large externally induced acquisitions of foreign exchange or because of large central bank-financed budget deficits, the central bank may be able to do no more than prevent the commercial banks from increasing their loans and thus adding further to the money supply on the basis of the additional reserves thereby acquired.

Difficulties for the central bank would similarly tend to occur when there is an externally induced decline in exchange reserves and in the money supply because of a drop in world demand for the country's exports. The central bank may at best be able to prevent the commercial banks from bringing about a secondary decline in the money supply via loan contraction. If the central bank *were* successful at such time in inducing a partially offsetting credit expansion by the commercial banks to the private sector, the current drain on exchange reserves would tend to be increased. How far such countercyclical action could safely be attempted by the central bank, and in fact more especially by the government, would thus depend upon the amount of exchange reserves that the country had previously accumulated and upon whether or not and how far imports and other payments abroad were officially restricted.

Role, Objectives, and Potentialities

Fundamentally, the basic objectives of monetary policy, and indeed of fiscal policy, do not differ greatly in underdeveloped countries from those in the more developed ones, despite the widely differing economic and social frameworks. Internal financial stability, high and rising levels of per capita real income, and external payments balance—these are the major goals sought in each case. But there is likely to be a substantial difference in emphasis on these goals in the two sets of countries. In developed countries, the avoidance of inflation and deflation is usually the primary objective. In underdeveloped countries, on the other hand, the promotion of economic growth tends to overshadow all other goals of national economic policy. All too frequently, in fact, internal and external stability have been sacrificed in an attempt to achieve this basic objective.

The problem of increasing and mobilizing real resources in underdeveloped countries and of channeling them into expenditures serving the needs of sound and balanced development, as well as the im-

plementation of other measures designed to promote development, is primarily a responsibility of the government through its tax, expenditure, debt, and other financial and economic policies. The primary objective and responsibility of the central bank should be to seek to achieve and maintain reasonable financial stability through control of the supply, cost, and availability of money. To the extent that the central bank were able by use of its various credit-control powers to contribute to the achievement of this objective, it would to that degree not only prevent the inequities and misuse of resources associated with inflation (or deflation), but also provide a necessary, though not sufficient, condition for increased saving, for attracting foreign investment, and for promoting more balanced economic growth. The maintenance of internal financial stability would also help to foster, though by no means necessarily to assure, the maintenance of external payments balance as well. It is obvious, however, that the central bank alone cannot assure such stability. The fiscal and other policies of the government must carry a very large part of the load. Even aggressive, co-ordinated stabilization efforts by the government and the central bank may not always be enough.

In the formulation and implementation of appropriate central bank policies, a key problem lies in the nature of the relationship between the central bank and the government. All too often in the past such policies have been hampered or thwarted in underdeveloped countries by excessive political interference in the operations and policies of the central bank and by undue government recourse to central bank credit. These problems cannot be solved merely by legislation or formal administrative arrangements. Fiscal policies must be so ordered as to keep government resort to bank credit within appropriate limits. Effective monetary policy also requires that the central bank, while of necessity remaining in close consultation with the government, must be permitted to exercise a wide measure of freedom in policy-making, in operations, and in independently developing and expounding its own point of view, on the basis of its objective appraisal of the situation at hand, freed from short-run political pressures which often conflict with the long-run welfare of the economy.

In their efforts to maintain internal financial stability by attempting to limit the growth of the money supply to the growing needs of a developing economy for money balances at constant prices, central banks in many underdeveloped countries also face the special prob-

lem already noted arising from the wide externally induced swings in exchange reserves and in the money supply that occur from time to time. These swings accentuate the difficulties of the central bank in attempting to maintain reasonable internal stability and tend to militate against the steady implementation of economic development programs.

There is little that the central bank can do by measures of credit policy to offset the primary expansions and contractions in the money supply associated with such swings. To be sure, open-market sales or purchases of securities by the central bank to or from the *non-bank* public could, if substantial enough, help to offset these primary changes (and the associated effect on commercial bank reserves), but the securities market is invariably too narrow to permit such offsetting to be carried very far. In general, the central bank's main task at such time, as already suggested, should be to try to prevent the secondary changes in the money supply that would tend to occur. To the extent that an underdeveloped country is at all able to control the magniture of externally induced swings in the balance of payments and their primary impact on the money supply and money incomes, the problem is predominantly one, not for credit policy, but for fiscal, payments and trade, or exchange policy. It is not within the scope of this paper, however, to discuss such policies, closely related though they are to credit policy proper.

As already suggested, the primary contribution that the central bank can make to the promotion of economic development in underdeveloped countries is to do what it can, by means of the various credit-control instruments at its disposal, to help maintain reasonable internal financial stability. But its efforts need not, and in fact should not, stop here. The majority of central banks in underdeveloped countries have in actual practice adopted a variety of measures designed more actively to promote the over-all development of their economies. Some of these measures are admittedly outside the traditional scope of central banking, but central banking in these countries should not necessarily be evaluated in terms of the standards and criteria applied in the more developed ones. Such measures would for the most part be justified, however, only to the extent that they do not conflict with the overriding requirement of financial stability or involve the central bank in details of a sort that might distract its attention and energies from the effective implementation of a policy aimed at stability.

Within the framework of such a policy, the central bank can seek

to influence the flow of bank credit, and indeed of savings, in directions more in keeping with development ends. Thus, through selective credit controls applied to the banking system, through help in establishing and supporting special credit institutions catering to specialized credit needs, and through influence over the lending policies of such institutions, it can help to some degree to rechannel real resources in desired directions, both between the public and private sector and within the private sector itself. The central bank can also play a potentially useful role in increasing and mobilizing savings by helping in a variety of ways to develop a market in government securities and by helping to establish small savings institutions in rural areas if such are needed.

The central bank can also contribute in other less direct ways to promoting the over-all development of the economy. It can encourage and assist commercial banks to extend their branches into rural areas of the country so as to bring banking facilities to a larger part of the population. It can try to encourage a wider use of money in the non-monetary sector of the economy. It can help to improve the efficiency of the payments and remittances mechanism with the country. It can attempt to effect a better co-ordination between the organized and unorganized sectors of the money market so that its monetary policy can be diffused more speedily and effectively over the country as a whole. It can help, through the powers of bank supervision and examination which are usually intrusted to it, to promote sounder banking practices in the interests of greater bank liquidity and solvency. As a center for research, it can improve the country's statistical services and promote public enlightenment on economic and financial matters. Last, but not least, in its role as fiscal adviser to the government, it can help to promote sounder fiscal policies and practices. In short, by helping to build up and to strengthen the financial infra-structure of the country and to encourage sounder financial policies, the central bank can lay a firmer basis for economic development and, incidentally, facilitate the effectiveness of its own credit policies in the future.

Instruments and Techniques of Control

In their attempt to maintain reasonable financial stability and to promote economic development, central banks in underdeveloped countries can draw upon a variety of possible instruments and techniques of control.

The scope for effective open-market operations, especially as an

instrument of credit restraint, is narrowly limited by the size of the market in government securities. Any attempt to sell on a significant scale, when measures of credit restraint are called for, would only serve to depress securities prices unduly. As a result, where open-market operations have been undertaken, they have almost invariably been on the buying side. In some cases (e.g., Mexico and the Philippines), such purchases appear to have been dictated mainly by a desire to support securities prices and thereby encourage the growth of a market, rather than by a desire to influence the availability and cost of credit as such. In some instances, they have been made in keeping with the objectives of a cheap money policy (e.g., India up to the end of 1951), or to prepare the market for government flotations.

There are a number of measures that the central bank can take to develop a market in government securities, both as a means of making possible more effective open-market operations and of encouraging and mobilizing needed savings. It can advise the government on the appropriate timing of its issues and on the fixing of interest, maturity, and other terms designed to appeal to different classes of potential investors, and it can aid in the underwriting of various issues. It can assist in a more aggressive educational and selling campaign to widen the market for securities. It might permit government securities to be counted as part of commercial bank legal reserves, thereby encouraging the banks to hold a larger amount of such securities. Finally, by judicious operations in the open market to prevent undue price fluctuations, although without attempting to resist basic market trends, it can help to reduce fears as to the liquidity of these sceurities.[4] One difficulty here, however, is that support operations are usually most needed at times when a policy of credit restraint is called for; and open-market purchases might well run counter to such policy. Nevertheless, in some of these various ways, the central bank, notably in Mexico, Cuba, Ceylon, India, and the Philippines, has already contributed substantially to the growth of a government securities market. But, in general, progress in this direction has as yet been relatively slow.

For reasons already suggested, discount policy has not as yet been of much significance in the majority of underdeveloped countries as

4. A number of central banks, especially in Latin American countries, have actually established special "securities stabilization funds" to be used for this specific purpose. In actual practice, however, these funds have rarely been used. Some central banks, moreover, are empowered to issue their own securities for purposes of open-market operations to meet situations where their holdings of government securities are insufficient for this purpose. Only the Central Bank of Ceylon has availed itself of this power.

an instrument through which the central bank has been able to influence the cost and availability of credit. Changes in central bank discount rates in most underdeveloped countries have in actual practice been relatively infrequent. In general, moreover, such changes do not appear to have significantly affected the volume of commercial bank rediscounts and borrowings at the central bank, or commercial bank loan rates or other market rates, or the volume of commercial bank loans to their own customers. Even less has the unorganized market been affected thereby.

In an effort to exert a measure of selective credit control, many central banks, especially in Latin America, maintain a number of discount rates according to different kinds of paper eligible for rediscount or as collateral against borrowings. These various rates have frequently been changed without any change in the "basic" or "general" discount rate. Specially favorable rates are usually accorded to agricultural paper and to paper arising out of related productive activities in an effort to encourage commercial bank loans for such activities.

In those underdeveloped countries where commercial banks *do* rely to a significant degree upon central bank credit, the effectiveness of discount policy as an instrument of general and selective credit control is likely to lie, not so much in changes in discount rates, as in changes in the *availability* of credit. The central bank, by rationing its credit through rediscount quotas or ceilings, is in a position to exert a direct quantitative influence upon the loan potential of banking institutions. By rationing credit selectively according to various types of paper, moreover, the central bank may be able to some degree to influence the sectoral distribution of the loans of such institutions.

A large number of the central banks have the power to vary the minimum legal reserve requirements of banking institutions within a substantial range, and some of them are also empowered to impose very high supplementary reserve requirements against *increases* in deposits above those outstanding on a base date. Given the limited scope or relative ineffectiveness of open-market and discount operations and the wide swings in bank reserves in underdeveloped countries, resort to these devices as instruments of credit control may have to be had quite frequently, especially when bank reserves are rising unduly because of inflows of foreign exchange or central bank-financed deficits. A large number of central banks in underdeveloped countries have in fact experimented with them. Experience with

these devices, especially in Mexico and Colombia which have made most use of them, has indicated their considerable potentialities as control instruments, although in some cases their effectiveness has been hampered by the tendency of the commercial banks to hold large excess reserves.

Some central banks, such as those of Chile, Israel, Mexico, Uruguay, and the Philippines, have also used reserve requirements for selective credit control purposes. Banking institutions in these countries have been permitted to count certain earning assets, usually certain categories of "productive loans" and government securities, as part of their legal reserves in an effort to encourage them to extend credit in directions favored by the authorities and to promote the growth of a government securities market.

Among other instruments of credit control at the disposal of various central banks in underdeveloped countries is the power to impose ceilings on commercial bank loans in the aggregate or by specific categories. As a weapon of quantitative control, the portfolio ceiling device, which involves an objectionable degree of direct interference in bank loan policies, would seem to be recommended mainly for situations of extreme emergency when all other, less direct, methods of stopping or slowing up a dangerous credit expansion have failed or are likely to fail. A number of countries, notably Korea, Mexico, Colombia, Bolivia, and Chile, have resorted to this device in recent years, but in at least two of these cases the ceilings have been fixed too high or raised too frequently to be genuinely effective.

A large number of underdeveloped countries have relied at times of inflationary pressures upon the device of fixing prior deposit requirements for imports or minimum cash margins against import letters of credit in an effort to restrain the demand for imports or specific import categories and to exert an anti-inflationary effect. In those countries where the central bank engages in a substantial commercial banking business, the central bank has sometimes channeled its loans to the private sector selectively, or varied them in the aggregate for general credit-control purposes.[5] In a few cases the central bank has required all individual commercial bank loans above a

5. In general, however, it is not advisable for a central bank to engage in commercial banking. Experience has shown that such activity has tended to divert the central bank's energies from its primary central banking responsibilities, to subject it to added pressures to extend credit too liberally, and to arouse animosity from the commercial banks of a sort tending to weaken the central bank's prestige and the effectiveness of its monetary policy. If existing private commercial banking facilities are inadequate, it would be preferable for the government and the central bank to co-operate in setting up state-owned commercial banks.

certain minimum amount to be first submitted to it for prior approval. In at least one case (i.e., in the Philippines), the central bank, in an effort to stimulate lending institutions to make certain types of socially desirable loans to the private sector, agrees to guarantee the repayment of such loans up to a specified percentage. Moral suasion has also been widely resorted to.

Many of the techniques discussed above are, or can be, of a selective character designed to encourage or discourage specific types of bank loans and investments and thus to influence the allocation of bank credit and of real resources in desired directions, usually from the viewpoint of promoting more balanced economic development. Many underdeveloped countries, in fact, appear to have been much more concerned with the application of selective than of general credit controls. Although it is difficult to generalize about the results of selective controls in view of the variety of objectives sought and diversity of techniques used, the effectiveness of these controls, at least in influencing the distribution of bank credit within the private sector, has tended to be relatively limited in underdeveloped countries for a number of well-known reasons.

For one thing, even if selective credit controls are effective in discouraging undesirable types of commercial bank credit, there is no necessary assurance that the banks will want to use the resources so freed to expand credit in the desired directions. Even if these controls *are* formally effective in influencing the allocation of bank credit in keeping with the wishes of the authorities, there is no necessary assurance that the redistribution of bank credit will involve a corresponding redistribution of expenditures with the borrowed funds. For example, it would in most cases be relatively easy for a borrower formally to borrow for the "permitted" purposes but to use the funds in actual practice for "non-permitted" ones. Or, by borrowing more heavily for the "permitted" purposes, he would thereby be enabled to free his own resources for "non-permitted" expenditures. Leakages may also occur because of the administrative difficulty in most cases of defining different types of bank loans in precise operational terms and of determining whether any given type of loan is involved in any given case.

In a further effort to channel credit in directions more in keeping with the requirements of over-all economic development, many underdeveloped countries have established special institutions for the specific purpose of providing needed types of credit. In some cases the central bank has co-operated with the government in helping to

set up and to provide a measure of financial support to state-owned commercial banks designed to extend short-term production credit to deserving sectors of the economy not adequately serviced by private commercial banks. Of more importance, many underdeveloped countries have established official or semiofficial industrial and agricultural banks and development corporations in an attempt to repair the deficiency of medium- and long-term credit, and of equity finance, for industry and agriculture.

Within the limits on over-all credit expansion imposed by the requirements of financial stability, the central bank can play, and in some cases has in fact played, an important role in the organization and operation of such long-term financing institutions by contributing part of their initial capital and by supplementing their resources from time to time through loans and discounts and purchases of debentures. Many of these institutions have performed the valuable function of channeling public and private savings into deserving sectors of the economy and into development projects, while avoiding undue reliance on central bank credit. In other cases, however, especially in various Latin American countries, the central bank has often been forced under government pressure to extend an unduly large amount of funds to these institutions, with inflationary consequences. This is but another aspect of the larger problem of how to avoid excessive central bank credit to the government generally. There is also the need, which some countries have attempted to meet by formal administrative arrangements, of co-ordinating the operations of these institutions, even when they do not rely significantly upon central bank credit, with the monetary policy of the central bank so as to reduce the possibility of the two pulling in opposite directions.

Concluding Remarks

Despite the impressive array of instruments at its disposal, and the seemingly wide range of tasks that it might perform, central banking in the great majority of underdeveloped countries of necessity must be, and has been, only relatively restricted in role, scope, and effectiveness in view of the many institutional obstacles faced. Even in the developed countries, central banking is subject to various limitations; in the underdeveloped countries these are many times greater. Besides, fiscal policy, which needs to be so closely coordinated with monetary policy, is itself subject in most underdeveloped countries to special limitations that are likewise inherent in the economic backwardness of these countries. As these economies

grow, however, the force of these various obstacles and limitations should progressively abate.

On the other hand, there is a danger of underestimating the potentialities of central banking in underdeveloped countries at the present time. As this paper has tried to show, there is still a constructive role for central banks to perform in the great majority of these countries in helping to maintain financial stability and to promote economic development. In fact, there is even reason to believe that many of the central banks, especially those in Asia and the Far East and in the Middle East, have not yet fully utilized the potentialities of monetary policy, limited though they might now be. In general, however, the record of performance and accomplishment to date has been an encouraging one.

For the most part, central banks in the underdeveloped countries seem at present to be groping their way and cautiously experimenting with various instruments and techniques in an effort to determine their relative effectiveness and suitability under differing conditions and to test their adaptability to the local environment. It is to be hoped that out of this experimentation will develop a theory of central banking policy appropriate to the economically backward countries. For, in general, central banks in such countries have so far received, and can expect to receive, only relatively little guidance from the lessons, experience, and philosophy of central banking in the more developed ones.

DISCUSSION OF PAPER BY E. M. BERNSTEIN

ROBERT L. SAMMONS:* The financial problems of economic development arise from the basic fact that many countries simply do not have enough resources to finance the investment necessary to increase their output, while at the same time maintaining an acceptable, i.e., socially and politically tolerable, standard of living.

Mr. Bernstein distinguishes five facets of this basic problem, as follows: (1) to limit the size of the development program (i.e., investment) to the availability of real resources, (2) to stimulate the inflow of capital from abroad, (3) to encourage domestic savings, (4) to allocate the available resources (presumably those resources available for investment, although, of course, the problem of allocating the total between consumption and investment also exists) between the private and public sectors; and (5) with respect to the resources available to the private sector, to allocate them among different fields within the private sector in a manner that will stimulate the greatest expansion in production.

There can be no quarrel, I think, with this framework of analysis. I was particularly pleased with the emphasis on the total sociological and cultural nature of the development process. Many peoples want to be developed, but are not willing to pay the price in terms of changes in their accustomed modes of living and thinking.

1. The first of the five points—that of limiting over-all demand to available resources—is basically a question of fiscal and monetary policies, which Mr. Bernstein did not specifically discuss, except by a passing reference to the dangers of inflation as a disincentive to domestic savings. Presumably he takes for granted that the maintenance of a reasonably stable value for the currency is a *sine qua non* for the solution of the other financial problems. In view of the fact that inflations, with certain conspicuous exceptions, seem to be more prevalent in the underdeveloped countries than elsewhere, and that they not only tend to discourage savings but also to distort the pattern of use of resources in an uneconomic fashion, perhaps this most basic of all financial problems might have been given a little more prominence. It is almost impossible under any significant degree of inflation to effect the necessary transfer of command over resources from savers whose savings ordinarily occur in monetary

* Board of Governors, Federal Reserve System.

form to the entrepreneurs who have the technical and managerial ability to expand production but not the capital to do so.

2. With respect to the use of foreign capital, it seems to me that in Mr. Bernstein's almost classical explanation of the adjustment mechanism he perhaps expresses too great a fear of the cost of absorbing foreign capital. I agree with the statement that "A moderate but steady inflow of capital is far more effective in an underdeveloped country than a massive capital inflow that begins and ends suddenly." As a matter of fact this was one of the main theses of the Commerce Department's pioneer study, "The United States in the World Economy." It is, of course, theoretically possible that a country could get more foreign capital at once than it could profitably absorb. However, in the typical situation of unemployed or underemployed resources, it would not necessarily be the case that wages and prices need rise in order to facilitate the inward transfer of the real resources involved. Most of the local expenditures would be in the construction industry, which typically pays higher wages than those sectors—mainly agriculture, services, and retail trade—which contain most of the unemployment or underemployment. The necessary transfer of labor could, therefore, be achieved without any rise in wage rates in the construction industry, and, probably, without any reduction in output in the other sectors (and hence no rise in their costs or prices). Moreover, the additional local expenditures would undoubtedly lead fairly quickly to increased imports of consumer goods (which could be financed by the exchange provided by the foreign investment), thus providing a further brake on any tendency for local prices to rise. If things threaten to get out of hand, the authorities could also provide offsets through the use of suitable fiscal and credit policies. In addition, the foreign prices of most raw materials produced in underdeveloped countries are not significantly affected by rises in local currency costs and prices—the producer usually bears the burden of such cost increases. He may, of course, in the longer run be compelled to reduce production. But it is hard to see how a rise in domestic prices will induce a decline in foreign demand for exports by raising the foreign price at which the goods are sold, at least in the short run.

3. One can agree wholeheartedly with the desirability of increasing domestic savings, as long as what is meant is voluntary savings and not the so-called forced variety via the inflationary process. On the other hand, I would have supposed that the over-all inflationary impact would be less if investment is financed from abroad rather

than through domestic savings, contrary to Mr. Bernstein's statement. Of course, it all depends on what assumptions are made regarding other conditions and policies. But an inflow of foreign (monetary) capital, if it is really transferred, leads to a current account deficit in the balance of payments which, per se, would tend to be deflationary. And whatever the theory, I am reasonably certain that in practice, the risk of inflation is greater if a country tries to depend wholly or mainly on domestic savings.

The possibility of increasing savings even at existing levels of income is indeed frequently underestimated; the savings ratio is already quite high in many places. Investment in Latin America in 1955, according to the ECLA studies, amounted to a healthy 17.4 per cent of total resources used, and only 6 per cent of this investment was financed, on balance, from abroad. Clearly here is a case where output is not rising nearly as fast as would be technically possible with that rate of investment, considering that in many cases it is only a question of adopting techniques already in use elsewhere. One must look elsewhere, I suspect, for an effective way to increase the rate of development other than by just raising the rate of capital formation.

Among the policies needed to stimulate savings, a very important one is to refrain from stimulating uneconomic consumption through the use of subsidies or the maintenance of artificially low prices through direct controls, the latter being in effect a subsidy financed by the producers.

4 and 5. Perhaps the most important aspect is that of making the best use of what resources are available—the problem of allocation. Because of the difficulties of transfer from savers to private entrepreneurs, the government frequently winds up by appropriating a great deal of the savings to itself. This fact is recognized, and rightly deplored, by Mr. Bernstein. Everything should be done that is feasible to provide adequate institutional arrangements for private saving and investment—both in debt and equity securities. However, to what extent the government should direct the actual allocation among different branches of industry or even among individual firms is a moot question. Clearly in many countries where direction has been practiced, lack of information, bad judgment, or outright graft and favoritism have led to very unwise use of resources.

The financial problems of underdeveloped countries involve the use of the monetary, fiscal, and credit mechanisms in such a way as to (1) increase the amount of resources available for investment

(either from increased domestic savings or by facilitating the inflow of external capital), (2) to induce that investment to take forms which will most rapidly increase economic output (instead, for instance, of luxury housing, excess retail trade establishments, etc.), and (3) to induce the greatest possible productivity from existing resources of capital and labor. Of these three, perhaps the last is most important. It involves the use of tax and credit policies that put a premium on efficiency. It means that too many people must not be supported in idleness, total or partial, through unduly liberal social security schemes, laws, or practices reducing the mobility of labor, featherbedding, and other policies having similar effects on labor. It means a willingness to adopt modern methods of production in both the engineering and administrative (managerial) phases of production, regardless of the probable effects on the social and economic structure of the society.

DISCUSSION OF PAPER BY GARDNER PATTERSON

E. Gordon Keith:* Although I find much to commend and little to criticize in Professor Patterson's paper, I shall limit my comments to two somewhat related points that fall into the latter category. One is a point of terminology, the other is a matter of emphasis. The point of terminology has to do with the concept of forced saving. As I understand this term, and I think as Professor Patterson has defined it, it means a reduction in consumption forced on persons by a rise in prices. At one point in his paper, however, he speaks of a large forced saving potential in those underdeveloped countries which have not yet been monetized. And goes on to say that even after the economy has been monetized, some savings might be forced via deficit financing if the increase in the money in circulation is limited to something less than the increase in productivity. Now this, it seems to me, confuses voluntary reductions in consumption in order to build up one's stock of money with involuntary reductions brought about by higher prices. If the economy has the capacity to absorb more money without this bringing about a rise in prices, then there has been no forced saving.

It is of course important to know how much additional money an economy can absorb in deciding how much deficit financing can be undertaken without risking inflation; and this may well be the kind of a decision which it is very difficult for administrative authorities

* University of Pennsylvania.

to make, especially in underdeveloped countries. But I am unhappy about Professor Patterson's description of a capacity to absorb more money as a forced saving potential, since this implies that there are times when we are clearly justified in financing government programs through forced savings, and this I seriously question.

The point of emphasis has to do with the over-all appropriateness of effecting transfers of resources from consumption to the programs (investment) desired by the government. I have the feeling that Professor Patterson has praised with too faint damns deficit financing that leads only to mild inflation. I fear that an unwary reader of his paper might be left with the impression that deficit financing is really a very good and helpful tool, and that its major shortcomings lie in the lack of restraint that can be expected from the officials that use it. If they only knew how to stop short of serious inflation everything would be all right.

Personally, I would be inclined to argue that, once mild inflation has set in, taxation should be preferred to deficit financing. To pursue a policy of deficit financing beyond the point where it starts to raise prices is to place the burden of supporting the development program on those individuals and groups who are least able to defend themselves against inflation. There is a moral issue here which we cannot escape. Taxes too may be inequitable in their incidence; but even the worst tax is likely to do a better job of distributing burdens fairly than is the forced saving that accompanies inflation.

Professor Patterson speaks at one point of the "happy state of affairs" where the high profits of the industrialist and mercantile classes (during periods of mild inflation) are hoarded or used to pay off indebtedness. "Happy" yes, from the standpoint of checking further inflation; but not happy for those who have had to pull in their belts in order that their betters could hoard or get out of debt. If the government can use real resources more effectively than its citizens can, it is entirely proper for it to make the necessary transfers; but it should not do so in a way which leaves such unpalatable by-products. Taxation rather than deficit financing would seem to be the better approach.

DISCUSSION OF PAPER BY ARTHUR I. BLOOMFIELD

P. J. J. PINTO:* Mr. Bloomfield's survey of central banking in underdeveloped countries was both lucid and comprehensive, and I find myself in general agreement with him on the various issues he

* International Monetary Fund.

has raised. I am glad he has in no ambiguous terms pointed to the limitations on the effectiveness of monetary policy in underdeveloped countries. These limitations arise not only because of the general drawbacks which central banks in underdeveloped areas suffer from but also, as in the case of India, to the special emphasis which has to be placed on the public sector in order to build up the infra-structure of development. Notwithstanding the restricted efficacy of monetary policy and its secondary role in such conditions, I hold with Mr. Bloomfield that it is by no means negligible.

In the circumstances, therefore, I may perhaps supplement Mr. Bloomfield's paper by describing briefly the various steps taken by the monetary authorities in India in the past decade to strengthen the banking and credit system. In the first place, considerable attention has been given to building up strong and efficient banks through a system of regular inspection, particularly since 1949 when the Indian Banking Companies Act came into force. All the bigger banks have by now been inspected and a very large number of the smaller ones. The improvement thus effected, though by no means spectacular, is nevertheless solid and substantial, and further progress in this direction would seem to lie in a process of amalgamation which would bring smaller units together and raise their joint resources to a level more appropriate to present day conditions.

Simultaneously, attempts have been made to widen the distribution of banking facilities. A system of licensing for opening new branches has been in operation specially to prevent banking facilities from being congested in one place and to spread them out to places which hitherto have not had any branch at all. As you are probably aware, the State Bank of India was formed recently to take over the Imperial Bank of India, precisely in order to expedite the extension of banking facilities even if that meant incurring a temporary loss. The profits which will accrue to the Reserve Bank as the principal shareholder of the State Bank of India will be utilized to meet these losses. The State Bank is required to open four hundred branches within the next five years. Vigorous attempts are also being made to revitalize the entire structure of rural credit in accordance with the recommendations of the Rural Credit Inquiry Committee, and as the scheme proceeds it will extend the area of influence of the Reserve Bank very considerably.

Not only has regard been paid to the institutional factors but the instruments of central banking control have also undergone refine-

ment in the past decade. In 1951 the system of open-market operations was revised to give the Reserve Bank greater flexibility of control over credit. Briefly, by the new system, automatic assistance to the commercial banks by central bank purchases of government securities in times of seasonal stringency was discontinued, and in its place greater reliance was placed on accommodation against government securities but more particularly against usance bills. Hence originated what has been called "the Bill Market Scheme," and it was the first attempt by the Reserve Bank actively to promote the establishment of a bill market.

Selective credit controls have also been resorted to but the effects of such controls, as Mr. Bloomfield has shown in his paper, are more negative than positive. Recently, power has been given to the Reserve Bank to vary its reserve ratios (which so far had been rigidly fixed) and this means a further weapon in the armory which the Reserve Bank possesses.

In the context of central bank policy, which Mr. Bloomfield has outlined in his paper in general terms, recent trends in the Indian economy present an interesting problem. During the three years 1953 to 1955, it could be said that development in India had proceeded with a fair degree of over-all stability. Since April, 1956, however, there has been a rather severe drain on foreign exchange reserves. No doubt this drain can be traced principally to the impact of the plan on imports of capital goods. Nevertheless, the question arises as to whether a tighter monetary policy might or might not be useful for purposes of general control. On the one hand, since the drain on reserves is almost directly attributable to planned imports, the more reasonable solution might be to slow down the rate of spending. On the other hand, it might also be argued that a somewhat higher bank rate would also assist in the process, particularly as a regulator of spending in the private sector. Already, the Reserve Bank has in effect increased the bank rate from 3 per cent to 3½ per cent, because it has eliminated in two stages the concessions which it had originally offered as an inducement to popularize its bill market scheme and which now appear to be unnecessary. Whether a further rise would be wise or not would of course depend on a careful study of the various aspects of the situation, internal and external. In this context, it might be of interest to you to know that official policy now seems to be relying less on deficit financing and more on additional taxation. It goes without saying that the magnitude of

the plan still remains the basic factor, and hence the Indian authorities have left no doubt that they consider the plan flexible and that their approach will be realistic. It is their expectation, however, that internal measures to increase production and savings together with foreign assistance will make available resources in the required measure to carry the plan through on schedule.

SOME RECENT CHANGES IN BANKING

THE CHANGING SIGNIFICANCE OF TREASURY OBLIGATIONS IN COMMERCIAL BANK PORTFOLIOS*

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IT IS COMMON KNOWLEDGE that commercial bank holdings of government securities have gone down. In fact, they have done so in striking fashion. From a whopping $78 billion at the end of the peak year, 1945, member bank holdings of United States government obligations had shrunk to $46 billion by the June 30, 1956, call date. To this total, New York and Chicago contributed the greatest decline. Central reserve city holdings fell by more than 60 per cent—from $22 to 8 billion. The reserve city category accounted for slightly more than a 40 per cent decline—from $30 to 17 billion. Country bank holdings fell only 22 per cent—from $27 to 21 billion.

To some extent, the relative contributions of New York City and country banks to these declines are reflected in relative deposit positions. Demand deposits of New York City banks practically remained stationary during the 1945–56 period. Those of country banks increased by more than 50 per cent. It is not surprising, therefore, that the class of banks which has grown most rapidly contributes least to the decline of a particular asset. Incidentally, though we cannot discuss it here, what are the imprications of these figures for the question of the proper relationship among reserve requirements for various bank classes?

It is also interesting to note that, although country banks in 1945 held about 78 per cent of their Governments in bonds as compared with 60 per cent for New York City banks, both classes now have about two-thirds of their portfolios in bonds. While New York City banks have a limited supply of bills, country banks have greatly in-

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creased their holdings. It thus appears that the burden of bond price depreciation in small bank portfolios has not been as great as one might have supposed. It has been said that country banks are relatively locked-in because of their relatively long maturity distribution of Governments. However, they would hardly have acquired bills in such quantities if they were being pressed at the same time to liquidate bonds at a loss.[2]

Finally, let us look specifically at holdings of short maturities. As reported in the Treasury Survey of Ownership, marketable U.S. securities held by commercial banks due or callable within one year have fallen to lows during the past two years not reached since 1942. Average holdings in 1942 were $5.7 billion. These grew to $26.4 billion in 1945, then varied over a range of $16 to 28 billion. In 1955, however, the average declined markedly to $11 billion. Holdings for September 1956 were $13.6 billion.[3]

These, then, are the results of recent portfolio policy that have attracted so much attention. They are evidence of the recent stringency which has been the source of statements that banks are becoming more selective in making loans and of complaints that examiners are tightening up. They have been cited as evidence of a Treasury bill shortage. Although it is perhaps not very meaningful to speak of a bill shortage except in terms of a given bill yield,[4] the symptoms are revealing.

In order to interpret these recent portfolio changes, it is necessary to consider the various purposes for which commercial banks hold government securities. Ordinarily, if a bank were to maximize its income, it would not invest in Governments. But there are other matters for concern besides maximum income. And banks hold government securities in order to satisfy these additional needs. There appear to be three fundamental reasons for holding Treasury obligations: for liquidity purposes, for solvency purposes, and to serve as collateral for public deposits. Let us discuss these in reverse order.

Discussion of the use of government securities as a reserve against public, as opposed to private, deposits can be dispensed with quickly. No published information is available, but on the basis of a cursory sample, there seems to be a wide variation among banks of each

2. The figures cited thus far have been taken from the *Federal Reserve Bulletin*.

3. These figures may be gotten from the *Treasury Bulletin*. Thirteen-month averages are used.

4. See Robert Van Cleave, "How Much Liquidity, I and II," *C. F. Childs and Company Review*, Nos. 217 and 218, May 23 and June 6, 1955.

member bank class. However, on the average, over 40 per cent of total member bank holdings of U.S. government securities are pledged against deposits owned by the U.S. Treasury and the states or their political subdivisions.[5] This is perhaps an uninteresting use to which to put Treasury obligations. On the other hand, it is apparently of substantial importance in the case of some banks.[6]

In addition to their use as pledged assets, Treasury obligations have also come into prominence in discussions of commercial bank solvency. Traditionally, attention has been focused upon the capital ratio. Indeed, the Comptroller of the Currency once recommended that Congress limit national bank deposits to ten times capital funds.[7] And the 10 per cent rule-of-thumb was generally accepted. A bank adhering to this ratio could earn enough profits to attract additional capital, while one which exceeded the ratio failed to provide a sufficient margin of safety as a protection against possible losses.

During World War II, expediency as well as logic brought about the rejection of the 10 to 1 ratio. Banks were unable to increase their capital resources as rapidly as they acquired the federal debt. In addition, it semed unnecessary to do so in view of the riskless nature of the assets in question. During November, 1942, in order to promote the successful financing of the war, the various supervisory authorities removed all deterrents in examination policy toward investment in obligations of the federal government.[8]

The traditional yardstick was then supplanted by the risk asset ratio. Capital was accordingly related to total assets other than government securities and cash. Twenty per cent was generally accepted as the standard, with total capital being parceled out among the various categories of risk assets according to the exposure involved.

In recent years, bankers have defended a declining risk asset ratio on the ground that some of their so-called risk assets were in fact

5. For regulations governing U.S. deposits, see *Special Deposits of Public Monies under the Act of Congress Approved September 24, 1917, as Amended, November 10, 1949*, Treasury Department Circular 92, revised. For the state of New York and its political subdivisions, consult Sections 3a, 21, 31, 53, 64, 81a, 105, 106, and 145 of the *Corporate Law of the State of New York* and chapter 603 of the *New York State Laws of 1953*.

6. This statement is, of course, predicated upon the assumption that public deposits have a lower velocity than private deposits. Otherwise, ignoring solvency and liquidity needs, profit maximizing banks would sell their pledged securities and acquire higher yielding assets.

7. *Annual Report of the Comptroller of the Currency* (December 7, 1914), I, 21.

8. *Annual Report of the Board of Governors of the Federal Reserve System Covering Operations during 1942*, p. 21.

riskless. Guaranteed mortgages and loans secured either by the cash value of life insurance policies, U.S. obligations, or savings passbooks were cited. Some supervisors therefore introduced a secondary computation of risk assets which excluded these particular loans. A minimum secondary risk asset ratio was said to be 1 to 6, that is, 1 dollar of capital for each 6 dollars of risk assets.

A special committee of the New York State Bankers Association then combined both approaches and recommended that capital be compared with deposits less riskless assets.[9] In this case, cash, U.S. Governments, guaranted mortgages, and loans secured by them are taken to be riskless.

In each of these attempts to construct a more reasonable test of capital adequacy, government securities have come to play an important role and one which they will surely continue to play in the foreseeable future.

Next, may we turn to the role of government securities in meeting the liquidity needs of banking institutions? In general, the need for liquidity assumes two forms, the predictable and the unpredictable. Seasonal and locally characterisitc declines in deposits and increases in loan demand are manifestations of the predictable need for liquidity. In this case, Governments play something of a residual role. The possibility of unexpected customer loan demand and withdrawals due to cyclical, regional, and foreign shifts in business activity comprise the precautionary or unpredictable need for liquidity.

That government securities have played this later role effectively is apparent in the postwar stability displayed by the money supply. During a decline in business activity, the banks buy Governments. During the succeeding upswing, they slough off their Governments and make loans. Consequently, the quantity of demand deposits tends to remain constant. This is interesting contemporary evidence of the weakness of a rigid adherence to the quantity theory of money. For the level of business activity can move up and down while the quantity of money remains practically the same. It is necessary, therefore, to pay attention to the composition of bank assets as well as the level of their liabilities.

The recent unhappy experience of the banking community with intermediate maturities is evidence of its failure to pay sufficiently close attention to the precautionary role and particularly to the

9. *A Report of the Committee on Risk Asset Ratio Study* (New York State Bankers Association, March, 1952).

maturity aspects of liquidity. During the 1954 recession, the Treasury exploited the strong demand for its obligations by lengthening the maturity of its new issues. This move was perhaps untimely, since the over-all tenor of economic policy during a slackening of business activity should presumably be one of creating more liquidity, not destroying it.[10] Hence, a shortening in the term structure of outstanding debt would seem to be implied. Intermediate term obligations were nevertheless issued and acquired by the commercial banks. Recently, of course, they have been a source of realized capital losses as funds have been sought in order to meet unanticipated customer loan demand.

If the role of government securities in bank portfolios continues to be a significant one, it is for the purpose of providing liquidity to take care of unpredictable needs. How are these needs to be evaluated? Consider, if you will, a few factors that might have contributed to a shift in the liquidity standards of banks.

First, the federal government has, through its various enactments, surely reduced the liquidity needs of the banking community. The Banking Act of 1933 established the Federal Deposit Insurance Corporation. The Banking Act of 1935 gave the Board of Governors of the Federal Reserve System wide discretionary powers over eligibility requirements. These innovations have supplied the means whereby an old-fashioned financial panic can readily be prevented. Further support is provided by the Employment Act of 1946. According to this legislation, the federal government is committed to take steps toward maintaining high levels of employment.

And what of the discount window for unexpected needs? Clearly, if the central bank indiscriminately played the role of lender-of-last-resort, member banks would then be in a position to ignore with impunity the necessity for the internal provision of liquidity. However, Revised Regulation A[11] specifically warns against the exercise of the discount privilege for other than temporary or emergency needs. And it is apparent from observations of recent experience that the portfolio of a member bank which is indebted to the Federal Reserve System for an extended period is due for some rather pointed questioning. Of course, exceptions are made in the case of unusual local economic conditions. Exceptions are also made for necessitous

10. That debt management policy should be consistent with over-all economic policy is, of course, one among several criteria that could be applied. The standard used depends upon the desired policy mix. Debt management might, e.g., be subordinated to monetary policy, the debt completely funded, with "bonds only" replacing "bills only."

11. The revision is dated February 15, 1955.

borrowing by the money market banks, uniquely exposed as they are to sharp and erratic pressures beyond their control. Although here the frequency of borrowing is offset by the frequency of settlement. In any case, there would seem to be no reason to attribute a shift in liquidity standards to discount policy.

Moreover, a number of factors point to the possibility of increased fluctuations in interest rates.[12] Should this be the case, investment portfolios will fluctuate in value accordingly, and the premium attached to liquidity will be enhanced. What are these factors which point to shifting interest rates? In the first place, an institutionalized saving process and a flexible credit policy both contribute to stability on the supply side of the money and capital markets. That is, there has been of recent years a growth of contractual saving in the form of life insurance, pension fund contributions, amortized mortgages, and instalment loans.[13] The contractual form of these commitments leads to stability in the supply of investible funds. Similarly, a flexible credit policy offsets in some measure changes in supply which stem from cyclical fluctuations in income and saving.

The demand side of the money and capital markets, on the other hand, may be increasingly subject to instabilities. The growth of contractual saving increases the marginal propensity to consume and hence accentuates cyclical fluctuations in consumption expenditures.[14] In other words, in the downswing, for example, the impact of declining income is borne chiefly by non-contractual outlays. Thus the institutionalization of saving imparts a greater cyclical sensitivity to consumption expenditures than would otherwise be the case. And the availability and use of instalment credit transforms this sensitivity into greater money and capital-market pressures.

The demand for funds may also be subjected to increased pressure by corporate borrowers. In face of declining profit margins, the present high level of plant and equipment expenditures can be maintained only through increased reliance upon external sources of capital.

Thus, if relatively stable supply is accompanied by shifts in demand, sharper movements in interest rates are implied than would occur if supply and demand tended to move sympathetically. These

12. See Roger F. Murray, "Investment Policy at the Crossroads," *Commercial and Financial Chronicle* (June 28, 1956), pp. 14, 40.

13. See Bella Kobocow, "Two Close Looks at Consumer Income," *Business Record*, National Industrial Conference Board, XIII, No. 11 (November, 1956), 480–88.

14. *Idem*.

changes in interest rates would then have balance sheet effects which would lead to an increase in liquidity preference.

At first thought, it seems reasonable to suppose that bank management would contemplate unlimited inroads upon its quick asset position, however imminent the need for liquidity, in exchange for a sufficiently high return. In other words, will there not be a continuous movement along the liquidity preference function in pursuit of higher interest rates? Either of two possible factors may at some point prevent such a substitution of income for liquidity. First, in the case of an individual borrower, a higher interest payment may be more than offset by the increase in risk to the lender caused by the burden to the borrower of the higher interest charge. Secondly, the exposure to risk of an illiquid position and the overwhelming disutility of actual bankruptcy may be of such proportion that the required compensatory increase in yield would far exceed the dimensions of historical experience.[15]

Then there is the external limit to either shifts or movements along the curve imposed by the examiner. Even if an internal sensitivity to liquidity needs is lacking, each bank is periodically scrutinized by the relevant regulatory body. During the recent stringency, a number of bankers have protested that examiners are tightening up.[16] This allegation may be a mistaken one. The recent expansion of loans has doubtless for the first time put the portfolios of many banks in a position which warrants examiner comment. But whether examinations have become more strict or not, there are certain standards which the banks must maintain.

15. As a matter of practice, of course, the individual bank will typically stop far short of the point where such pressures might become effective. This is due to the strong tradition in banking against moving to a position far removed from the currently accepted norm.

It may be argued that, in view of the influence exerted by the average or generally accepted liquidity ratio, and in view of the likelihood of Federal Reserve intervention in the event of a general liquidity crisis, the average could be pushed by persistent loan demand to the vanishing point. Hence, the internal drives for liquidity are in fact without influence, except perhaps as a rationalization of conformity. In other words, if a bank officer looks only to the average, and if the average declines, and if he can rely upon the Federal Reserve System in case the average goes too low, the desire for liquidity does not have a restrictive effect. And whatever brake that does exist is provided by the lag in the movement of the average.

This argument can be refuted on the following grounds. First, because of varying attitudes toward risk, the average is not composed of banks with identical liquidity standards. The existence of diversity means that all would not reach the crisis stage at once. Hence, the individual bank could not be certain of Federal Reserve support. Secondly, individual banks are subject to a variety of pressures of varying magnitudes. Thus, even if all were at the average, they would not be exposed to extreme pressures simultaneously. Again, the Federal Reserve System could not be relied upon. Consequently, individual banks contribute to the preservation of an average greater than zero. It follows that a rational banker will pay attention to liquidity needs apart from those of conventional origin.

16. See, e.g., *American Banker* (September 13, 1956).

By the way, none of these remarks concerning either internal or external liquidity standards should be construed as implying a rigid system impervious to the short-term influence of changing economic conditions. Unquestionably, the viewpoint of bank officer and examiner alike, perhaps subconsciously, is affected by the outlook. Nevertheless, so long as these conceptions of adequate liquidity are not completely flexible and change with a lag, they are significant for the issues at hand.

On balance, it appears that, although the demand for liquidity has been subjected to unequal forces, it has by no means evaporated. What measure, then, should be used as a basis for judging the extent to which liquidity needs have been satisfied? Liquid assets usually include vault cash, balances with domestic banks, free reserves, U.S., guaranteed, and other investment securities maturing within one year, and loans for the purchasing or carrying of securities. This bundle of assets must be compared with the need for liquidity. The measure of this need for liquidity depends upon fluctuations in deposits and loans with proper allowance for trends and for contingencies.

Unfortunately for our purposes, and as examiners are wont to say, this is a matter for the individual bank. Nevertheless, we can at least try to put together some figures on liquid assets. To begin with, let us define liquid assets to be the sum of vault cash, excess reserves, balances with domestic banks, and Treasury bills and certificates less borrowings.[17] By this measure, total member bank liquidity was $1.485 billion on the June 29, 1929, call date. This was held against adjusted demand deposits of $16.324 billion. On June 30, 1956, there were $11.018 billion in liquidity against $88.139 billion in adjusted demand deposits. In other words, the liquidity ratio,—that is, the ratio of liquid assets to demand deposits, was 9 per cent in 1929 and 12.5 per cent in 1956. Thus, by the 1929 standard, we are not yet at full stretch.

Let us remember, however, that in 1929 call loans were relied upon to satisfy liquidity needs.[18] And rightly so, because we are now considering liquidity from the viewpoint of the individual bank. By the same token, the existence of FDIC, a more powerful and aggressive Federal Reserve System, and the Employment Act is relevant in the present context only in so far as they induce depositor con-

17. Strictly, that portion of required reserves freed by a loss of deposits should be included. But neglect of this item errs on the conservative side.

18. See *Federal Reserve Bank of Richmond Monthly Review* (September, 1956), p. 4.

fidence. For in case of a general liquidity crisis, the resources of the Federal Reserve System would surely be made available. Examiners, moreover, take the measure of a bank's liquidity needs in terms of, among other things, the composition of its loan portfolio. If, then, we include call loans in our liquidity measure, it appears that we are indeed hard pressed today. This ratio stood at 17 per cent on June 30, 1956, as compared with 69 per cent on June 29, 1929.[19]

By either historical standard, bank liquidity is relatively low. And the decline in bank holdings of short-term Treasuries accounts for the decline in liquidity since 1945. This does not necessarily mean, however, that Treasuries no longer play a significant role in bank portfolios. To be sure, they have declined as investments, and more liquid maturities have given way to loans. But they appear still to play a basic liquidity role. Borrower protests indicate that we are perhaps close to the minimum. Loans of all commercial banks increased by something less than $6 billion during the first three quarters of 1956 as compared with almost $8 billion during the same period of 1955.[20]

Moreover, in view of current debt management policy, there is no immediate cause for believing shorter maturities will not continue in the near term to be available for liquidity purposes. In December, 1951, the average length of federal marketable securities outstanding was seventy-two months. In November 1956, it was fifty-nine months.[21] This reminds one of the financial commentator who quipped: "Alice explains to the Red Queen, 'We're deciding when it's a good time, a poor time, and no time to float a long-term Treasury bond issue. As you see, most time is no time.' "[22]

Before concluding, what is the longer-term outlook for Treasury securities? If we persist in our policy of balancing the national accounts and if the present trend of private debt creation continues, it is a matter of simple arithmetic that the public debt will eventually be swamped by the growth of private obligations. At the close of World War II, net public debt was about twice private debt. A decade later, private debt has almost tripled, while public obligations remained approximately stationary.[23]

19. Figures on bank liquidity are from *Banking and Monetary Statistics* and the *Federal Reserve Bulletin*.

20. See the *Federal Reserve Bulletin*.

21. Above par and partially tax exempt securities to first call. Figures assembled by the Treasury Department.

22. As quoted in the forthcoming work, *Study of Economic Effects of Federal Debt Management Policies*, by Burton C. Hallowell and K. M. Williamson.

23. These statements are based upon figures found in the *Survey of Current Business*.

The final equilibrium, of course, depends upon debt management policy. But a continuation of the present term structure will doubtless result in the fairly permanent lodgement of longer issues in portfolios whose composition is severely constrained legally and as a means of diversification in the portfolios of all financial institutions. Short-term issues will doubtless continue to be a popular vehicle for synchronizing the flow of funds by the chief financial officers of public bodies and financial and non-financial institutions alike. For banks also, the shorter maturities will continue in their present roles. But growth of the economy involves expanded needs which a static federal debt cannot continue to satisfy fully. And so for liquidity purposes, short-term Treasuries will increasingly be assisted by loans of federal funds, call loans, bankers acceptances, and open-market paper. Guaranteed obligations, agencies, municipals, and high-grade corporates will be relied upon more and more in measures of the adequacy of bank capital.

In the field of monetary policy, a decline in the importance of Governments in institutional portfolios implies a return to the more tenuous connection between open-market policy and lender behavior that existed prior to the growth of the federal debt. Open-market operations in government securities will no longer have the same direct balance sheet effects upon non-banks as well as banks that occur when these institutional lenders hold substantial quantities of the same asset dealt in by the central bank. Moreover, if the erosion of time outruns the effect of funding operations, the direct balance sheet effects that remain will be minimized.

Is the following conclusion then warranted? Government securities continue to be a significant part of commercial bank portfolios. Eventually, however, there is every prospect that they will be cast in a supporting role.[24]

24. On the growing importance of corporate securities, see Roger F. Murray, "What Yield Do You Use?" *The Analysts Journal* (August, 1955), pp. 15–16.

DISCOUNT POLICY IN THE LIGHT OF RECENT EXPERIENCE

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As PART of the Accord of March 1951, Treasury and Federal Reserve authorities agreed that "the Federal Reserve . . . would . . . reduce or discontinue purchases of short-term securities and permit the short-term market to adjust to a position at which banks would depend upon borrowing at the Federal Reserve to make needed adjustments in their reserves. This contemplated a level of short-term interest rates which, in response to market forces, would fluctuate around the Federal Reserve discount rate . . ."[1]

This goal has been largely attained. During the interval since the Accord—and especially during the periods of tight money in 1952–1953 and 1955–1956—member banks have in general relied on discounting much more heavily in adjusting reserve positions than had been the case at any time since 1933.[2] Moreover, short-term interest rates, as reflected primarily in rates on short-term Government securities, have tended to fluctuate around or close to the discount rate.

The re-emergence of member bank borrowing from the Federal Reserve banks as a primary method of adjusting reserve positions once again raises to prominence the question of the role of discount policy in the over-all complex of monetary action. The purpose of this paper is to explore this matter by touching upon five questions: (1) What is the statutory and administrative basis for discount operations? (2) What are the advantages of discount policy as an instrument of credit control? (3) In what ways does discount policy exert influence as a device of credit control? (4) How should dis-

* Views expressed in this paper are those of the writer and not necessarily those of his associates in the Federal Reserve System.

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1. Joint Committee on the Economic Report, *Monetary Policy and the Management of the Public Debt—Replies to Questions and Other Material for the Use of the Subcommittee on General Credit Control and Debt Management*, 82d Cong., 2d Sess., Sen. Doc. No. 123 (Washington: Government Printing Office, 1952), Part I, p. 75.

2. In the interests of perspective, it should be noted that, in total, discounting is still far from the dominant place as an aggregate reserve source which it held in the 1920's; it is the marginal or incremental role of discounting as a reserve source that has re-emerged.

count policy be co-ordinated with other instruments of credit control? (5) What are the criteria for changes in the discount rate?

I. Statutory and Administrative Basis for Discount Operations

The Federal Reserve Act authorizes the board of directors of each Federal Reserve bank to "extend to each member bank such discounts, advancements, and accommodations as may be safely and reasonably made with due regard for the claims and demands of other member banks, the maintenance of sound credit conditions, and the accommodation of commerce, industry, and agriculture."[3] These direct extensions of Federal Reserve credit are subject to the regulations of the Board of Governors of the Federal Reserve System. The Act as amended in 1933 directs each Federal Reserve bank to keep itself informed of the general character and amount of loans and investments of its member banks in order to ascertain "whether undue use is being made of bank credit for the speculative carrying or trading in securities, real estate, or commodities, or for any other purposes inconsistent with the maintenance of sound credit conditions." The Board of Governors is authorized to suspend the discounting operations of any member bank that is making "such undue use of bank credit."

These statutory directives provide the basis for administration of the discount mechanism, which is further outlined in Regulation A of the Board of Governors, as amended effective February 15, 1955. For purposes of this discussion, two paragraphs from the Foreword are pertinent.

> Federal Reserve credit is generally extended on a short-term basis to a member bank in order to enable it to adjust its asset position when necessary because of developments such as a sudden withdrawal of deposits or seasonal requirements for credit beyond those which can reasonably be met by use of the bank's own resources. Federal Reserve credit is also available for longer periods when necessary in order to assist member banks in meeting unusual situations, such as may result from national, regional, or local difficulties or from exceptional circumstances involving only particular member banks. Under ordinary conditions, the continuous use of Federal Reserve credit by a member bank over a considerable period of time is not regarded as appropriate.
>
> In considering a request for credit accommodation, each Federal Reserve bank gives due regard to the purpose of the credit and to its probable effects upon the maintenance of sound credit conditions, both as to the individual institution and the economy generally. It keeps informed of and takes into account the general character and amount of the loans and investments of the member bank. It con-

3. Federal Reserve Act, Section 4. Also pertinent to this discussion are Sections 9, 10, 13, 14, 19, and 24.

siders whether the bank is borrowing principally for the purpose of obtaining a tax advantage or profiting from rate differentials and whether the bank is extending an undue amount of credit for the speculative carrying of or trading in securities, real estate, or commodities, or otherwise.

It is clear from the language of both the Federal Reserve Act and Regulation A that discounting is a privilege and not a right of membership in the System; indeed, Section 4 of the Act states specifically that each Federal Reserve Bank shall give consideration to the character of an individual member bank's loans and investments "in determining whether *to grant or refuse* advances, rediscounts or other credit accommodations. . . ."[4] The authority of each Federal Reserve Bank to grant or refuse requests for discounts is of considerable significance in the operation of the discount mechanism in that it tends to strengthen the mechanism as a restrictive device. Furthermore, the language of Regulation A probably reinforces the "tradition against discounting" on the part of member banks, the significance of which will be discussed below.

Before turning to the advantages of discount policy as an instrument of credit control, it should be noted that Section 14 of the Act states that "every Federal Reserve bank shall have the power . . . to establish from time to time, subject to review and determination of the Board of Governors . . . , rates of discount to be charged by the . . . bank for each class of paper, which shall be fixed with a view of accommodating commerce and business; but each bank shall establish such rates every fourteen days, or oftener if deemed necessary by the Board."

II. Advantages of Discount Policy as an Instrument of Credit Control

Discount policy in recent years has been much maligned as an instrument of credit control. Disuse during most of the 1930's and 1940's and during the postwar years preceding the Accord gained for discount policy an unwarranted reputation as a sterile device that had outlived its usefulness. That Federal Reserve authorities did not hold this view is evident from the Treasury-Federal Accord, one of the purposes of which (as noted above) was to stimulate use of the discount mechanism. Since the time of the Accord, certain advantages of discount policy as a device of credit control have again become evident, and experience has demonstrated that these advantages may at times be so great as to warrant substantial reli-

4. Italics supplied.

ance on discount policy in implementing policy decisions. Five such advantages will be discussed.

1. The discount mechanism is particularly suited to supplying a portion of the reserves for seasonal or other temporary needs during periods of actual or threatening inflation.[5] For one thing, the reserves are borrowed, not owned outright by the member banks, and experience has demonstrated that member banks in general do not like to remain in debt to the Reserve banks for any great length of time, a reluctance that is encouraged by the language of Regulation A and the "policing" actions of the Reserve banks.[6] Consequently, the reserves created to meet the seasonal or other temporary need are likely to be extinguished automatically when the need has passed rather than absorbed in credit expansion. Stated differently, member banks as a group are more likely to administer their affairs conservatively when they have sizable debts to the Reserve banks.

There is still another reason for using the discount mechanism to supply reserves for temporary needs during a period of inflationary pressure, namely, that the reserves go directly and immediately to the points where needed, thereby providing efficiency in the use of reserve funds during a period of monetary restraint. It can be argued that in a fluid market reserves supplied through open-market purchases will be drawn quickly to the points where needed. This argument would be correct if the market for bank reserves were sufficiently fluid and mobile but it is not. Since member banks discount of their own volition, and presumably because they have immediate and pressing need for the funds, market fluidity is of little significance when reserves are supplied in this manner; the funds move immediately and directly to the points where needed and,

5. As a general matter, of course, a considerable portion of the temporary and regular variations in reserve needs of the banking system are met through open-market operations. As is emphasized in the subsequent discussion, however, such action does not exert the same effect in the market as does the supplying or absorption of an equal amount of funds through the discount window.

6. By "policing" is meant the administrative actions of each Reserve bank that are necessary to ascertain whether individual applications for discounts are appropriate in terms of the Act and of Regulation A. It might be noted in passing that the tradition against discounting is not, as some students seem to believe, an irrational prejudice. For one thing, banks, as financial institutions operating with extremely low ratios of capital to demand liabilities, have strong internal reasons to avoid committing their investment funds in a way that would require continuous short-term borrowing, particularly when that borrowing would be from a public institution such as a Reserve bank whose officials are under mandate to restrict credit when necessary to maintain economic stability. In addition, the reluctance to borrow is also based upon a well-established principle that banks should keep to a minimum liabilities that have preference over depositors' claims.

as argued above, tend to be extinguished automatically when the temporary need has passed.[7]

2. An advantage of the discount mechanism that is possibly of even greater importance is that primary reliance on discount policy during a period of business uncertainty may enable Federal Reserve authorities to avoid positive tightening (easing) actions by permitting the market to generate the additional pressure (ease).

Suppose for example that Federal Reserve authorities reach the tentative decision that recovery from a business recession (such as the recovery in late 1954) is approaching a point where some monetary restraint should be applied in order to dampen the rate of expansion. Such decisions are usually tentative; the forecast may be wrong. On the other hand, delay in exercising restraint may contribute to a costly business adjustment at a later date. Thus, some device is needed that will tend to be restrictive only if inflationary forces actually emerge.

Discount policy, if properly co-ordinated with open-market policy, may achieve this purpose quite well. Under the conditions described above, open-market policy might be designed to provide a volume of reserves just sufficient to meet seasonal requirements and possibly provide for secular growth of the money supply (whether such action would involve purchases or sales, or neither, would depend on the season of the year as well as behavior of the other reserve factors). Then, if demand for credit increased beyond the needs of sustainable growth, with resulting inflationary pressures, banks would be prompted to obtain funds through the discount window. A rising volume of discounts itself, however, because of the general reluctance against being in debt to the Reserve banks, tends to exert pressure on the market and promote higher money rates. If the pressure continues and discounting rises rapidly, the reluctance to borrow from, and remain in debt to, the Reserve banks might have to be reinforced by an increase in the discount rate.

7. The discussion in this paragraph is not meant to imply that considerable fluidity does not exist. Interbank borrowing, especially of federal funds, is playing an increasingly important role in redistributing the available supply of reserves and minimizing resort to borrowing from the Reserve banks. Another important element in market fluidity is the development by government security dealers of well-organized methods of locating and tapping available funds in any part of the country to meet their needs. Nevertheless, when Federal Reserve policy is restrictive and there is an over-all shortage of reserves, even the most efficient market mechanisms for the redistribution of available funds cannot avoid the need for recourse to the Reserve banks. Furthermore, only the larger banks have ready access to the federal funds market, since dealings are in units of substantial amount. Consequently, for the smaller banks and even for very large banks whose reserve needs cannot be met fully in the market at any given time, borrowings from the Reserve banks are likely to be the most feasible method of obtaining promptly the reserves needed.

(Considerations relating to changes in the rate will be discussed below.)

The important point is that, assuming proper implementation of open-market policy, the increased volume of discounting and the resulting pressure in the market will emerge only if demands become so strong as to warrant the additional pressure in the credit market. In essence, then, System authorities can rely on the market to confirm their judgment with respect to the business situation and premature positive actions to tighten the market can be avoided. The avoidance of such actions may be especially desirable during the early stages of a business recovery.

This technique might be used in reverse when Reserve authorities reach a tentative decision that a downturn in business activity is imminent. Again, open-market operations would be designed to supply an appropriate volume of reserves to the market for seasonal and growth purposes, and, as demands for funds subsided, the volume of discounting would tend to fall and ease would be injected automatically into the credit market.

3. The discount mechanism provides a safety valve that may be useful to individual member banks in the event of a liquidity drain. If such a drain results from a general liquidity crisis, the discounting privilege will be especially valuable to individual member banks even though open-market purchases and reductions in reserve requirements may inject large volumes of funds into the market, for there is no assurance that reserves released by these actions will move speedily to distressed banks.

Moreover, the discount mechanism enables Federal Reserve authorities to pursue a more restrictive policy through open-market operations than might be the case if member banks did not have direct and ready access to Reserve bank credit by discounting.[8] As Roosa points out, the discount window enables "individual banks to restore their reserves to the required levels when unforeseen losses of funds have created reserve deficiencies, and (helps) to even out among a succession of borrowing banks the incidence of a general policy that cannot strike all alike when there are so many payments going through each day to alter the distribution of reserves and deposits among the thousands of separate unit banks."[9]

8. Paul Samuelson makes this point in his "Recent American Monetary Controversy," *The Three Banks Review*, No. 29 (March, 1956), p. 11. See also Robert V. Roosa, *Federal Reserve Operations in the Money and Government Securities Market* (New York: Federal Reserve Bank of New York, 1956), pp. 24–25.

9. *Op. cit.*, p. 24.

4. Discount policy is in some respects more flexible than other instruments of credit control in that differential policies can be pursued in the various Federal Reserve districts. Both theory and practice indicate that the ability to establish differential rates might prove most useful during a period of transition to a more restrictive credit policy, inasmuch as discount rates could be increased in one or two districts in order to test market reactions. For example, System authorities might be almost convinced that a general increase in discount rates is desirable, but they might also feel that caution is necessary. Under such conditions market reactions might be tested by raising rates in one or two districts. If the judgment proved incorrect, it would be a simple matter to reduce these rates after a while, with possibly less harm done than if all rates had been raised. If the judgment proved correct, rates in the remaining districts could be brought into line within a short time. In either case, the opportunity to gauge market reactions might enable System authorities to avoid costly and premature actions when the outlook is uncertain.

The maintenance of a higher (lower) rate in one district for an extended period might be justified when there is a clear-cut inflationary (deflationary) movement occurring in that district. Admittedly, a situation in which an inflationary or deflationary movement is district-wide but at the same time confined to the one district might never occur; it would be difficult to point to any such experience in the past. Furthermore, it might be impractical—especially under conditions of active demand for bank credit—to maintain differential rates for extended periods in case there should develop a tendency for banks in the low-rate districts to borrow from their Reserve banks in order to lend (through the federal funds market, for example) to banks in high-rate districts.

5. The final advantage of discount policy to be considered may at times be the most significant advantage. Discount policy—particularly with respect to changes in the rate—is a simple and easily understandable technique for informing the market of the monetary authorities' views on the economic and credit situation. Open-market operations, which are used to cushion the effects of seasonal influences as well as for cyclical and growth purposes, may at times be confusing to some observers because the System may be supplying funds to the market (e.g., during the autumn, when seasonal expansion of bank loans and currency in circulation requires an increased volume of reserves) when cyclical developments clearly dictate a

restrictive monetary policy, or vice versa. The time-honored device of raising or lowering discount rates, however, can hardly be susceptible to misinterpretation by even the most uninformed observers.

III. Influence of Discount Policy

The third question to be considered relates to the manner in which discount policy exerts influence as a device of credit control. Four routes will be discussed.

A. THE DISCOUNT RATE AS A PRICE

The price effect is clouded by the tradition against discounting. This effect is even more complex because the tradition is by no means universal; some banks have no compunction whatsoever against borrowing from their Reserve banks, while others—perhaps embittered by past experience or for other reasons—will resort to direct use of Reserve bank funds under no circumstances. Still a third group may turn to the discount window under what they consider to be pressing circumstances, but prefer to utilize other routes for obtaining reserves whenever feasible. In spite of the tradition and its uneven influence, experience has demonstrated that the reluctance in general tends to grow weaker as the profit spread between market rates (particularly rates on short-term government securities) and the discount rate widens. The individual banker, who, after all, is attempting to show a profit in his operations, is more likely to borrow from the System to offset a reserve loss or to obtain reserves for credit expansion when that alternative is more attractive in terms of price than when the alternative is less attractive. This is not meant to imply that the price spread is under all circumstances the deciding factor; many other considerations undoubtedly affect the decision of the individual banker.

B. EFFECTS ON EXPECTATIONS OF A CHANGE IN THE DISCOUNT RATE

The effects on expectations of a change in the rate depend largely on market psychology at the time of the change (or when the market becomes relatively certain that a change is in the offing). If, as has been true of most changes in the years following the Accord, the market anticipates the action, the effects will probably be discounted in advance and, consequently, market manifestations of shifting expectations at the time of the change are likely to be hardly noticeable or even nonexistent. In such cases, rate charges may be viewed

simply as confirmation of past events, or an attempt to bring the discount rate in line with market rates.

On the other hand, changes in the rate may have a marked psychological effect when the market is taken by surprise. One might speculate, for example, as to the effects on expectations of an increase in rate in, say, December, 1954; or a decrease in early May, 1953.

Stated differently, the probable impact of a change in the rate on market expectations would seem to depend primarily on whether the market had guessed right concerning the direction and degree of Federal Reserve policy. If the market is convinced that System authorities intend to pursue a restrictive (easing) policy, and discount rate is subsequently raised (lowered), the expectation effects following the change are likely to be meager. If, under the same circumstances, however, the rate is lowered (raised), expectation effects are likely to be pronounced indeed. Also, market reactions might be pronounced if discount rate were not changed in the face of strong expectations of a change. It is apparent that a close relationship exists between the use of the rate to inform the market of the views of the System authorities and expectation effects of rate changes.

C. EFFECTS ARISING FROM THE TRADITION AGAINST DISCOUNTING

The tradition against discounting is a twofold phenomenon. First is the reluctance of a large number of member banks to borrow from Reserve banks; second is the tendency for member banks to look upon reserves obtained in such manner as temporary funds to be returned as soon as is practicable. This second aspect of the tradition—the reluctance to remain in debt to the Reserve banks—is most pertinent to this part of the discussion. (As has already been noted, the language of the Federal Reserve Act and of Regulation A, as well as the administration of the regulation by Reserve bank authorities, tends to strengthen the tradition.)

The significant effects stemming from the existence of the tradition against discounting arise from the fact that banks are more likely to expand earning assets when the volume of indebtedness to the System is relatively small than when it is relatively large. There is an important *ceteris paribus* assumption to be added, however, for the greater the profit spread between market rates and discount rates, the weaker the reluctance becomes. Price effects, although

sluggish, play an important part in the operation of the discount mechanism.

D. EFFECTS OF RESERVE BANK SURVEILLANCE OF DISCOUNTING

The Federal Reserve banks are required under Regulation A to ascertain as nearly as possible whether member banks are borrowing for appropriate purposes. If such policing is effective—and it is an administrative task of considerable proportions during periods of active discounting—there may be some discouragement of speculative growth of credit. Too much should not be expected of this route, however, partly because of the administrative difficulties involved, and partly because control, even if effective, can be exercised only over the initial use of the funds.

IV. Coordination of Discount Policy with Other Instruments of Credit Control and Criteria for Changes in the Discount Rate

The last two questions to be considered involve the co-ordination of discount policy with other credit control devices and the criteria for changing the discount rate. These two questions are closely related and will be discussed together.

A. LESSONS OF PAST EXPERIENCE

Federal Reserve experience with discount policy in the 1920's holds important lessons for the 1950's. As is shown in Figure 1, discount policy and open-market operations were co-ordinated closely in the twenties. If, for example, System authorities felt that expansion was proceeding too rapidly, they would first probe or condition the market through sales of Government securities.[10] The withdrawal of funds would promote tighter conditions in the credit market; banks would tend to become short of reserves and would borrow to replenish them. If demand for funds was as strong as System authorities believed, market rates (particularly those on open-market commercial paper and bankers' acceptances) would tend to rise. The discount rate might then be increased. System authorities followed an opposite technique (i.e., open-market purchases to probe the market, etc.) when expansionary actions seemed appropriate.

The specific criteria for changes in the discount rate were market

10. We are abstracting from changes in other reserve factors, such as gold stock or currency in circulation. Variations in these factors would, of course, either increase or decrease the need for open-market sales or, in some instances, actually require purchases to offset a large decrease in reserves.

rates on ninety-day bankers' acceptances and four- to six-month open-market commercial paper. When these market rates, in response to open market probing, moved sufficiently in either direction to touch the discount rate, Reserve authorities usually adjusted the rate to restore its position between the two market rates.[11]

An advantage of this process was that the System could experi-

11. There were, of course, exceptions to this rule. However, such exceptions were minor until 1929, when the acceptance rate was allowed to rise above the discount rate at the Federal Reserve Bank of New York for several months. Since the market had become habituated to following the objective criteria of the acceptance and commercial paper rates, this change in practice became the subject of widespread interest and concern. The market soon interpreted this event as a change in the rules and possibly as an indication—later confirmed—of disagreement within the System as to appropriate policy under the circumstances.

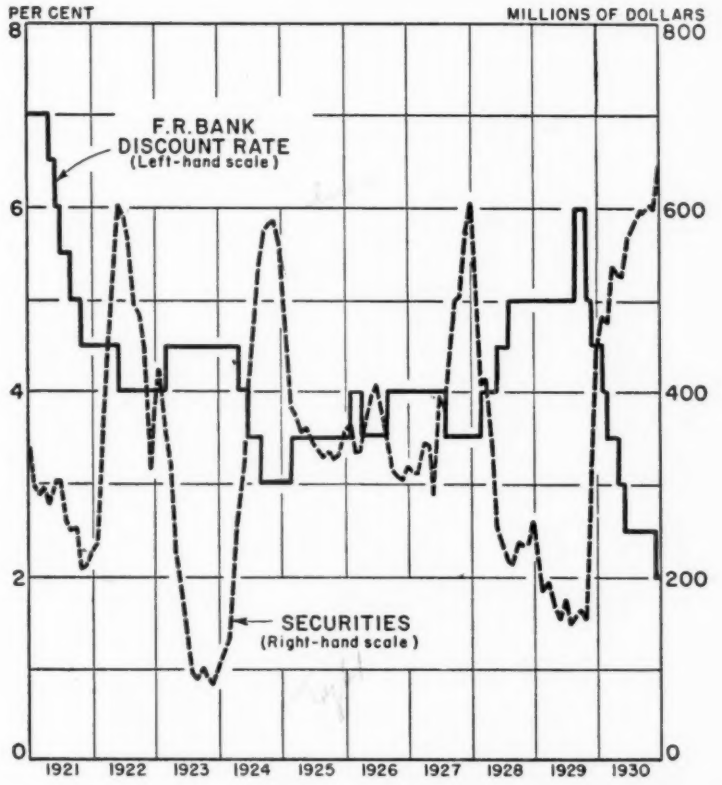

FIG. 1.—Federal Reserve holdings of government securities and discount rate at Federal Reserve Bank of New York. Source: Board of Governors of the Federal Reserve System.

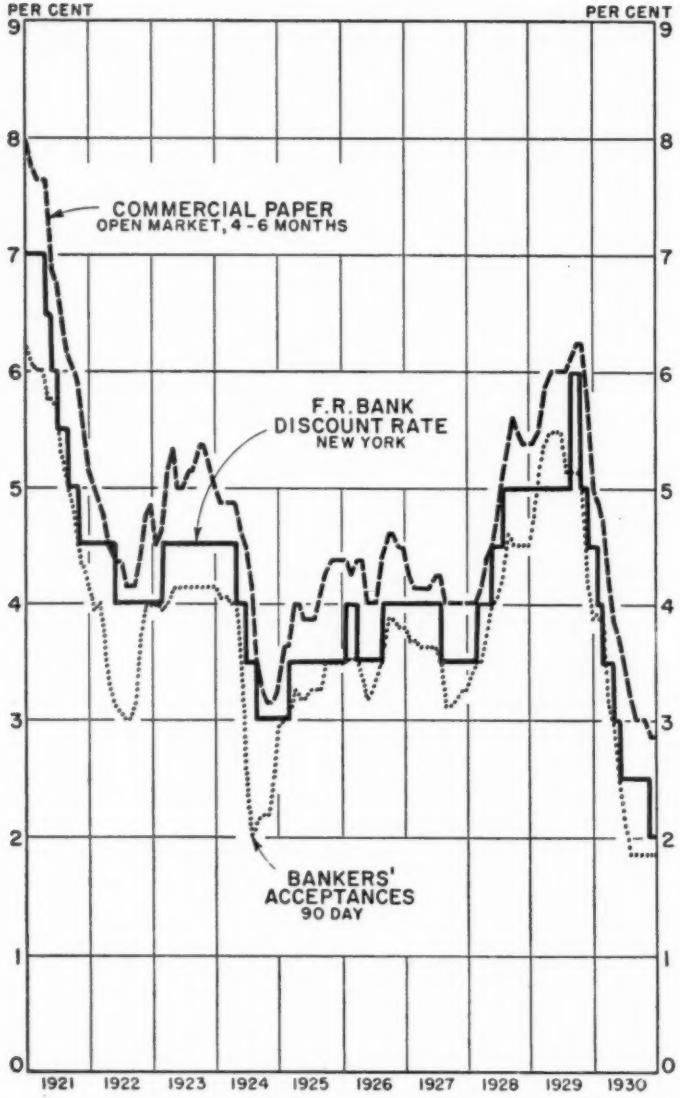

FIG. 2.—Short-term interest rates. Source: Board of Governors of the Federal Reserve System.

ment or probe with open-market operations. Then, depending upon subsequent business and credit developments, the System could strengthen or continue the operation—or even reverse it—without upsetting the market. The change in rate as the last link in the process became, in a sense, a formal confirmation of a judgment expressed tentatively and initially in the open market.

The fact that typically the discount rate was adjusted to market rates did not mean that System policy as a whole was directed by a rule-of-thumb, nor did it imply that the System was passive in the money market. It meant merely that the change in rate became the last link in a chain of actions, but that the actions had been initiated as a result of a conscious and explicit judgment with respect to the state of business and the credit market.

B. TECHNIQUES FOR THE 1950's

The co-ordinated use of open-market operations[12] and discount policy—the former being used to probe or condition the market in advance of changes in discount rate—would be a suitable procedure for the 1950's. Indeed, the procedure has, in essence, been followed during the past few years. However, primary attention in so far as market rates are concerned must now be focused on rates on short-term government securities, inasmuch as the types of paper that were important in the 1920's are not nearly so important today, and in view of the fact that short-term Governments are the most popular instruments for adjusting bank reserve positions.[13]

Specifically, as a tenative judgment is reached concerning overall System policy, open-market operations could be used to probe or condition the market. This action might be sufficient and thereby avert the need for a change in the discount rate, which is always somewhat dramatic. If, when policy is restrictive, demand for credit

12. In some instances, variations in member bank reserve requirements may be used for probing or conditioning the market. However, experience since the Accord indicates that System authorities intend to confine changes in reserve requirements to reductions during periods of recession. Thus, reserve requirements may be viewed primarily as a "one-edged" instrument. Moreover, such reductions usually involve the release of at least $1 billion reserves, an amount too large for the type of probing operation discussed in this paper.

13. Although the Treasury bill rate probably should still be viewed as the single most important market rate vis-à-vis the discount rate, developments during the past two years have reduced its significance as an indicator of bank reserve pressures. Commercial banks have reduced their holdings of bills to a low level, while non-financial corporations and foreign investors have actively sought the instruments as a highly liquid investment. Consequently, short-run fluctuations in the bill rate during the past two years have sometimes reflected factors affecting corporate demand for bills rather than the ebb and flow of reserve pressures in the banking system. Nevertheless, the bill rate is still a key money market indicator and occupies an important place among the several rates that should be watched closely in formulating and implementing Federal Reserve policy.

is strong, member banks are likely to borrow from the Federal Reserve Banks to obtain reserves. Under such conditions, Reserve authorities should watch carefully the volume of discounting, the level of market rates, and the complexity of the policing problem. A rising volume of discounting, increasing market rates, and growing complexity of the policing problem—all of these are signals that an increase in the discount rate might be appropriate. In general, the situation is just the reverse when policy is designed to promote ease in the market.

It is essential to understand that there is nothing inviolate about this procedure. Although some useful guides to action exist, there is no simple formula, no rule-of-thumb that will apply in all cases. To imply to the market that certain guides or criteria will be followed under all circumstances may involve the danger of confusing procedures with objectives. Means may come to be looked upon as ends, and any change of procedure, however justified, may produce perverse reactions in the market.

In practice, considerable variation in the timing of discount rate changes, as contrasted with the procedure outlined above, may often be justified. For example, conviction on the part of Reserve authorities that economic conditions are deteriorating rapidly would justify a speedy (and perhaps two- or three-step) reduction in the discount rate (and possibly reserve requirements) without engaging in advance probing of the market. Also, a wave of optimism and speculative fever might justify an increase in the discount rate even though the guides had not indicated such action to be appropriate. It is apparent, then, that the techniques outlined here would be most useful when System authorities form only tentative judgments concerning the economic situation. But this is tantamount to saying that the procedure would be applicable in most instances, for in practice decisions of Reserve authorities to reverse or to strengthen policies almost invariably come gradually.

V. Conclusion

During the past few years discount policy has played a unique and significant role in the over-all complex of System monetary action. Its re-emergence as a major instrument of credit control has laid to rest the theories of the 1930's and 1940's that characterized discount policy as a sterile device that had outlived its usefulness. It is apparent, upon reflection, that disuse of the discount window

was to be expected under the easy money conditions that prevailed and would probably recur if such conditions re-emerged.

This is not, as some observers might argue, because discount policy is a one-edged instrument, valuable as a restrictive device but of little use in promoting ease. One of the most important conclusions to be drawn from the preceding discussion is that discount policy cannot be considered in isolation from the other instruments of credit control, especially open-market operations. We may customarily refer to Federal Reserve policy actions as falling into two areas, but there is no necessity to do so; indeed, such reference may be misleading. Actually, as the instruments were applied in the twenties and as they have been applied since the Accord, the open-market policy action conditions the discount policy action, and vice versa. Neither can be explained alone without regard to the other. The instruments may be compared to the two blades of one pair of shears; in this instance, the shears have shown quite as much capacity for promoting ease in the market as to impose restraint.

The second important conclusion is that there is not and cannot be one simple guide or rule-of-thumb to be followed in formulating and implementing discount policy. Market observers seem constantly to be searching for one or a few indicators (such as the Treasury bill rate) that will signal a change in discount rate. There are some useful guides to action; but discount policy (as manifested in changes in the rate) is essentially conditioned by business and credit developments and previous decisions with respect to open-market operations or, in some instances, reserve requirements. In the final analysis, administration of discount policy must rest upon judgment in a given situation at a given time.

ELEMENTS OF TIMING AND RESPONSE IN THE BALANCE SHEET OF BANKING, 1953–55*

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I. THE PROBLEM

THE PURPOSE of this study is to describe the general response of commercial banks in the continental United States to changes in their reserve position. Taking aggregate earning assets as the general indicator of balance-sheet response, an attempt is made to measure both the speed and magnitude by which earning assets react to changes in reserve holdings. A monthly series on total earning assets of commercial banks is drawn up for the period 1953–55 and examined for its functional relationship to "effective" reserves, with and without respect to time. The response of bankers is also related to one variable outside the banking system—the rate of change in interest rates.

II. ADJUSTMENT OF THE DATA

A

In order to measure the functional relationship between reserves and earning assets, one must allow for the fact that the capacity to use reserves for the purchase of earning assets is highly variable. In fact, there are two restraints, each varying from month to month, on the ability of bankers to extend loans or purchase investments. One is the required ratio of reserves to deposits. The greater is this ratio, the less are bankers able to convert given reserves into earning assets. During the 1953–55 period reserve requirements for member banks were changed three times. However, the effective reserve requirement for member banks as a whole depends not only on the announced ratios, but also on the distribution of deposits between demand and time, and among central reserve city, reserve city, and country banks. There is a differential requirement between demand

* The author has benefited from many comments and criticisms made by his colleagues at Purdue. However, Professor R. G. Thomas was particularly helpful in discussing and resolving problems that arose throughout the course of the study. Mr. John Dittrich rendered valuable computational assistance. The author alone is responsible for any remaining errors.

and time deposits, and for demand deposits among banks in the various geographical locations. In point of fact, the distribution of deposits among these categories changed almost every month, as did the effective reserve requirement for member banks during the three-year period studied.[1]

The other restraint on the utilization of bank reserves derives from the fact that increments in reserves, even at a constant reserve requirement, vary in their availability to bankers. The typical increase in reserves accompanies a rise in primary deposits; part of the new reserves are placed immediately in the required holdings of the banking system and can never be loaned out or invested. But reserves loaned by the Federal Reserve to member banks are without this initial limitation. The rediscounted note furnishes funds that are completely free for use in the purchase of earning assets by the banks. Reserves transferred to bankers through the sale of bank stock are also unrestricted and represent a greater effective quantity of reserves than those furnished by primary deposits.

The basic adjustment made to the data will be to express all changes in the capacity to convert reserves into earning assets as changes in the nominal quantity of reserves held at an unchanging capacity. For example, a lowering of the reserve requirement, which enables the banking system to purchase additional earning assets, will be expressed as an increase in the level of reserves held at the old reserve ratio. Similarly, increments in reserves created by Federal Reserve discounts and bank capital flotations will be inflated by some factor representing their greater availability. An increase of $10 in reserves borrowed from the Federal Reserve might be raised to $11 or $12 to reflect its greater usability in the purchase of earning assets. A series incorporating these adjustments may be considered "effective," as opposed to nominal, reserves.

There are two reasons for making the adjustments leading to effective reserves. First, we acquire a common denominator—changes in the quantity of reserves held—to which the behavioral response of the banking system can be related. Whether the change affecting reserves is a physical increment or an altered capacity to spend reserves, the change is shown as a movement in the quantity held. This brings into clear view for ready comparison and summation all aspects of the banker's reserve position. Second, expressing the reserves of every month in terms of a constant capacity for use

1. See Clark Warburton's article, "Bank Reserves and Business Fluctuations," *Journal of the American Statistical Association*, XLIII (December, 1948), 547–58, for an "effective" reserves series that takes account of changing reserve requirements.

makes possible a separation of the impact of changing capacity on earning assets from other influences. The unadjusted observations on reserves and earning assets confound the banker's propensity to use reserves with his capacity to do so. Expressing reserves in terms of a constant capacity enables the banker's propensity to be observed and the underlying factors to be isolated.[2] The ultimate justification for making these adjustments is, of course, their usefulness in predicting the responses of the banking system. The assumption that all aspects of the banker's reserve position can be put into a common denominator will be tested by the empirical investigation that follows.

There are two main steps in the adjustment procedure: (1) an adjustment to take account of the varying availability of reserves, and (2) an adjustment to express reserves of comparable availability in terms of a constant reserve requirement. The description of these adjustments will employ the following symbols: R is the total quantity of reserves held by the entire banking system (for member banks R is total deposits at the Federal Reserve); D is total deposits in commercial banks subject to reserve requirements less cash items in the process of collection (D will hereafter be "net deposits" which, for member banks, are all demand and time deposits except demand balances due from domestic banks and cash items in process of collection); E is total earning assets (loans plus investments) gross of valuation reserves; r_r is the required ratio of reserves to deposits (r_r is a weighted average of the different requirements behind various classes of deposits). R, D, and E are measured in dollar amounts. In general the subscript "o" pertains to observed, and the subscript "r" to required quantities.

B

The adjustment for varying availability of reserves will be described first. An increment in reserves, $\triangle R$, flowing into the banking system via primary deposits, furnishes $(1-r_r)\ \triangle R$ in excess reserves for the purchase of earning assets. An increment, $\triangle R$, acquired by rediscounting a note at the Federal Reserve, is completely excess and fully spendable.

2. The bankers' utilization of reserves can also be observed directly from data on excess reserves. But the present model provides ready information for relating the observed use or non-use of reserves to other variables. For example, the current level of earning assets may be explained in this model by the increment or the absolute level of effective reserves prevailing at the present or any past time. In fact, any attempt to account for excess reserves should start by securing the kind of additional information provided by this model.

$$\frac{\Delta R}{\Delta R\,(1-r_r)} = \frac{1}{1-r_r}$$

is thus the ratio of availability in reserve increments fully spendable to those of which an $r_r \triangle R$ portion must initially be placed in the required holdings. For example, if r_r is 20 per cent, a dollar of reserves may represent 80 cents or it may be a full dollar in spendable funds, depending on its source. Since the published data on reserves regard a dollar as a dollar, regardless of its availability, those reserves coming to bankers by way of stock issues, earned surplus, or Federal Reserve borrowings will be multiplied by $1/1 - r_r$. This will raise the fully spendable increment, $\triangle R$, to $\triangle R\ (1/1 - r_r)$. Since all reserve increments are recorded as $\triangle R$, the ratio of the adjusted fully available increment to the observed partially available increment is

$$\frac{\Delta R\left(\frac{1}{1-r_r}\right)}{\Delta R} = \frac{1}{1-r_r},$$

which is the same as their relative availability derived above. In terms of our example the fully available dollar becomes $1 \times 1/(1 - .2) = 1 \times 1\frac{1}{4}$ or \$1.25, while the "80-cent dollar" remains at its recorded value of \$1.00. The ratio of the two increments, \$1.25/\$1.00 = 1.25, is the same as the ratio of their availability, \$1.00/\$.80.

How do we identify those reserve increments to be multiplied by $1/(1 - r_r)$? The problem of identification turns out to be rather complicated. One cannot simply take all new capital or member bank borrowings as the relevant total. Reserves transferred to bankers via earnings might be held as vault cash or deposited in foreign banks; a loan from the Federal Reserve could also be converted into currency. Since neither deposits in foreign banks nor vault cash of member banks are counted as reserves in this study, we would not apply the adjustment for greater availability to those portions of new capital or member bank borrowings. Another difficulty concerns reserves obtained through the sale of government bonds by banks to the Federal Reserve. It might appear that these reserves are comparable to those acquired through discounts, since they are also fully available. But because such reserves are obtained by the sale of securities, their *net* capacity for the purchase of earning assets is no greater than that of ordinary (partially available) reserve incre-

ments.[3] Fortunately, a reasonably good approximation to the reserves of greater availability can be obtained by reference to only three balance-sheet variables. The basis for this will be shown by means of a numerical example.

In Figure 1 (a) reserves, net deposits, and total earning assets are shown on a partial balance sheet of the banking system. \$100 in reserves are fully loaned out under a reserve requirement of 20 per cent. In Figure 1(b) \$10 have been added to reserves by depositors. Figure 1(c) shows the new equilibrium in which earning assets have risen \$40. An alternative case is shown in 1(d) where \$10 in additional reserves have been borrowed from the Federal Reserve. The equilibrium in this instance is given in 1(e) where earning assets are up by \$50. The greater expansion of earning assets in the second case merely reflects the greater availability of reserves borrowed from the Federal Reserve—\$10 in excess reserves, compared with \$8

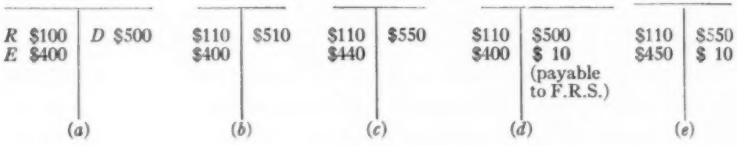


FIG. 1

in 1(b). Now notice that in (a), (b), and (c) of Figure 1 the following equality holds: $R + E = D$. But in (d) and (e) $R + E$ exceeds D by \$10—the amount borrowed from the Federal Reserve and added to reserves. Similarly, if banks were to sell \$10 in new stock to depositors, D would fall and capital would rise by \$10; $R + E$ would again be \$10 greater than D. Since the capital account and payables to the Federal Reserve are the only claims other than net deposits on reserves,[4] the quantity $d = R + E - D$ can in general be taken as equal to fully available reserves. But there is one assumption underlying this interpretation of d: no part of the currency deposited in member banks is held as vault cash. If depositors'

3. Under a 20 per cent reserve requirement an increment of \$10 in reserves furnished by primary deposits will enable the banking system to purchase \$8 × 5 = \$40 in earning assets. \$10 acquired by selling a bond to the Federal Reserve can buy \$10 × 5 = \$50 in earning assets. But the additional earning assets obtainable in the latter case are exactly equal to the \$10 in bonds given in exchange for the reserves. Thus, the net potential holdings of earning assets are the same for either reserve increment.

4. All other liabilities are offset by assets other than reserves, e.g., demand balances due to domestic commercial banks correspond to balances due from domestic banks on the asset side; loans payable to commercial banks are offset by loans due from commercial banks.

balances are not redeposited with the Federal Reserve, D would exceed $R + E$ and d would tend to be negative. The assumption that deposited funds are used only as reserves is certainly not met in practice. However, our main concern is with increments rather than the absolute level of reserves and any components such as d. A comparison of monthly series on $\triangle d$ and the change in vault cash of all commercial banks reveals that in 29 out of 36 months the movement in d is considerably greater than that in vault cash. Rarely would the addition of the whole increment in vault cash to $\triangle d$ substantially alter the latter quantity, except on occasion to increase it absolutely by a slight amount. Thus, the omission of all or part of the cash increment is usually not important to the value of $\triangle d$. Of course, it is impossible to identify the portion of vault cash furnished by depositors.

Meanwhile, the use of d to measure fully available reserves meets other requirements. Any part of Federal Reserve loans or bank capital held as vault cash, deposited in foreign or mutual savings banks,[5] or invested in fixed assets, has no bearing on R, E, or D, and therefore will not affect d. Moreover, the sale or purchase of government bonds from the Federal Reserve will be reflected in equal and opposite movements in R and E, again leaving d unchanged.[6]

The adjustment for fully available reserves will be made by taking the product, $\triangle d\ (1/1 - r_r)$, which is the inflated value of the fully available reserve increment. But $\triangle d$ is already included in the unadjusted reserve increment, and so we will add only the difference,

$$\Delta d\left(\frac{1}{1-r_r}\right) - \Delta d = \Delta d\left(\frac{r_r}{1-r_r}\right),$$

to the observed change in reserves. In practice r_r is changing continually. Thus, ideally the term, $r_r/1 - r_r$, will be replaced by $E\ (r_r/1 - r_r)$, the expectation or mean of all such ratios prevailing

5. If fully available reserves held by a member bank are deposited on demand with another member bank, an equivalent amount of reserves continues to be fully available between the two banks, since interbank demand deposits are effectively without a reserve requirement. But if the reserves are deposited in a foreign bank they will either give rise to a reciprocal domestic deposit payable to the foreign bank, or else leave the country in the form of gold. Since deposits held by foreign banks require reserve backing, the original reserves in either case will be less than fully available. Finally, if reserves fully available are deposited in a mutual savings bank, the net result will probably be a new deposit payable to the savings bank, which also ties up reserves.

6. It is possible for bank capital or Federal Reserve loans, held as vault cash, to be loaned out and withdrawn from the banking system. Since this transaction would increase earning assets without raising R or D (the loan is reflected on the liability side in either the capital account or in payables to the Federal Reserve), it would also increase d. Thus, d could overstate somewhat the current level of fully available reserves, although it cannot do so by very much.

during the month. The increments so adjusted will then be added to each preceding reserve figure to generate a series, R'. The first term in the series will be the unadjusted reserve figure for the last day of the initial month, December, 1952. If the month is denoted by $i = 1, 2, \ldots k, \ldots n$, adjusted reserves for the kth month are

$$R'_k = R_1 + \sum_{i=2}^{k} \left[\Delta R_i + \Delta d_i E \left(\frac{r_r}{1 - r_r} \right)_i \right],$$

where $\triangle R_i$ and $\triangle d_i$ are observed values, and r_r represents the various required reserve ratios prevailing during the ith month. The summation starts at the second month, at which the first increment is available.

C

The second step in the adjustment procedure is to express reserves of comparable availability in terms of a constant or standard reserve requirement, r_{rs}. The principle can be derived easily by reference to the T-accounts. Compare the equilibrium in Figure 2, in

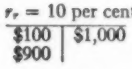


FIG. 2

which the reserve requirement is 10 per cent, with that in Figure 1(a), where $r_r = 20$ per cent. If the banking system is fully loaned up, earning assets are \$900 in Figure 2, and \$400 in 1(a). In terms of its convertibility into earning assets, a dollar of reserves under the 10 per cent requirement is thus potentially worth 900/400 or 2.25 times its purchasing power under the 20 per cent requirement. If r_{rs} were 20 per cent, the reserves of \$100 in Figure 2 would be expressed as \$225, the reserves in 1(a) remaining at \$100. If r_{rs} were 10 per cent, the reserves of 1(a) would become 4/9 of \$100 or \$44.44. The general factor, ρ, by which reserves are converted to the standard amount is obtained as follows. For any current month the equilibrium of the banking system at full utilization of reserves is $R = r_r D$, or $D = 1/r_r R$. Also,

$$E = D - R = \frac{1}{r_r} R - R = R \left(\frac{1}{r_r} - 1 \right).$$

If

$$a_1 = \frac{1}{\frac{1}{r_r} - 1},$$

then $R = a_1E$. In the base period in which r_{rs} prevails,

$$E = \left(\frac{1}{r_{rs}} - 1\right)R,$$

or $E = a_2R$, where

$$a_2 = \frac{1}{\frac{1}{r_{rs}} - 1}.$$

The ratio of potential purchasing power of current to base-period reserves is thus

$$\rho = \frac{a_1E}{a_2E} = \frac{a_1}{a_2},$$

which is the factor for conversion to standardized or effective reserves. That is, since current-period reserves are worth ρ times reserves for which r_{rs} is the requirement, $R'' = \rho R'$, where R' is current reserves adjusted for the fully available component, and R'' is R' expressed in terms of the standard requirement, r_{rs}. Upon simplifying,

$$\rho = \frac{r_{rs}(1 - r_r)}{r_r(1 - r_{rs})}.$$

In our example with $r_{rs} = 20$ per cent, $a_1 = 9$, $a_2 = 4$, $\rho = 9/4 = 2.25$, and for any current month $R'' = 2.25\ R'$.

D

A final adjustment to the data involves the figure for earning assets. After adjusting reserves for varying availability and expressing them in terms of a standard reserve requirement, it is unlikely that the observed ratio of earning assets to effective reserves (R'') will reflect the same propensity to invest that is present in the original data. For example, if bankers were holding earning assets which were .9 of the amount permitted by the current reserve requirement, the unadjusted figure for earning assets is unlikely to be a comparable percentage of permitted holdings under r_{rs}. The observed propensity to hold earning assets can be re-introduced by adjusting E as follows. Define

$$c = \frac{r_0}{r_r},$$

where the numerator is the observed, and the denominator the required, ratio of reserves to deposits. c, a measure of the average propensity to hold reserves, is also the ratio of observed to required

reserves. Then cr_{rs} is the current propensity to hold reserves in terms of r_{rs}. For example, suppose that r_r is .20, r_o is .25, $c = .25/.20 = 1.25$, and r_{rs} is .10. cr_{rs} would be $1.25 \times .10 = .125$ which, relative to r_{rs}, is the same propensity to hold reserves as $r_o = .25$ is to $r_r = .20$. Since E is observed to be $(1/cr_r - 1)$ times unadjusted reserves, the adjusted earning assets figure generated by cr_{rs} will be

$$E'' = \left(\frac{1}{cr_{rs}} - 1\right) \times R''.$$

III. The Data

The adjustments described in Part II call for an adjusted reserves figure which is equal to

$$R''_k = \left\{R_1 + \sum_{i=2}^{k} \Delta R_i + \Delta d_i E\left(\frac{r_r}{1 - r_r}\right)_i\right\} \left\{\frac{r_{rs}(1 - r_r)}{r_r(1 - r_{rs})}\right\}_k,$$

where k is a particular value of i, the variable denoting month. The first bracketed factor is the adjustment to observed reserves for $\triangle d = \triangle(R + E - D)$, while the second factor converts reserves to a standard reserve ratio, r_{rs}. The adjusted figure for earning assets is

$$E''_k = \left(\frac{1}{c_k r_{rs}} - 1\right) R''_k,$$

where $c_k = (r_o/r_r)_k$. The data required for these adjustments are really only available for member banks. We will therefore confine our discussion to member banks, postponing momentarily the sources on non-members.

For member banks we need observed reserves, required reserves, gross earning assets, and net deposits—all on a common monthly date from December, 1952, to December, 1955. Most of the monthly banking series published in the *Federal Reserve Bulletin* (hereafter FRB) are given on the last Wednesday of the month, which was accordingly made the target date for all monthly series, except in June and December. On the two latter months the series were pegged to end-of-month dates in order to synchronize with data furnished at end-at-month quarterly intervals by the National Bureau of Economic Research (hereafter NBER).[7]

Member bank reserves, defined as deposits with the Federal Re-

7. The National Bureau data were provided by the Postwar Capital Markets Project, headed by Raymond W. Goldsmith.

serve, were taken from the FRB table, "Member Bank Reserves, Reserve Bank Credit, and Related Items" (hereafter FRB, Table A). This table reports the level of member bank deposits seen through the eyes of the Federal Reserve. Hence, it overstates reserves as viewed by the member banks by a float factor which averages $100 million, but is sometimes as much as $300 million. There was no reliable way to remove the float from reserves on a monthly basis, but the month-to-month distortion introduced by it did not appear to be great.

Required member bank reserves were also taken from FRB, Table A. Net demand deposits and time deposits are given in the FRB table, "Deposits, Reserves, and Borrowings of Member Banks" (Table B). Unfortunately, all data reported in this table are monthly averages of daily figures. This is a distinct limitation on the usefulness of the data—but monthly averages proved to be more reliable than independent estimates of net member bank deposits, and so the averages for each month were arbitrarily applied to the last Wednesday or month-end, as required. It was not felt that an attempt to adjust the averages by shifting or linking them to other series would increase reliability of the deposit data.

Earning assets for all classes of banks are reported in the FRB table, "Principle Assets and Liabilities and Number of All Banks, by Classes." Loans are reported net of valuation reserves, as is the total earning asset figure. Although the adjustment for $\triangle d$ requires that E be gross of valuation reserves, estimation of the latter was not felt to be necessary. A quarterly series on valuation reserves provided by the NBER worksheets was remarkably stable. Adding valuation reserves to E would thus do little to alter $\triangle d$, and was therefore not done.

$E\ (r_r/1 - r_r)$ cannot be obtained directly. Although the expectation of the ratio is not the same as the ratio of the expectations, $E\ (r_r/1 - r_r)$ can be approximated by

$$\frac{Er_r}{E(1 - r_r)} = \frac{\bar{r}_r}{1 - \bar{r}_r}$$

for small monthly variations in r_r. r_r was taken as the monthly average of daily required reserves divided by the monthly average of net deposits (both quantities are given in FRB, Table B). The required reserve ratio in force on January 28, 1953, was arbitrarily selected as the standard reserve ratio, r_{rs}. Its value is .1557.

There is no published information on reserves or reserve require-

ments for all non-member banks whose earning assets are about 16 per cent of the commercial bank total. In fact, the requirements vary so much from state to state that a monthly estimate of actual non-member reserves was not attempted. Instead, a definition of these reserves, involving published data, was adopted on the grounds of plausibility. Non-member reserves were defined as all vault cash and deposits of non-member banks with the Federal Reserve System. Total vault cash of all banks, including mutual savings, was obtained as the difference between "Money in Circulation" and "Currency outside Banks." The former series is given weekly in FRB, Table A (in the January, 1956, issue of the *Bulletin* its name was changed to "Currency in Circulation"), and includes all currency outside the Treasury and Federal Reserve Banks. "Currency outside Banks" is reported for last Wednesdays in the FRB's "Consolidated Condition Statement for Banks and the Monetary System." Its coverage is the same as "Money in Circulation," except that vault cash of all banks is excluded. Thus, the difference between "Money in Circulation" and "Currency outside Banks" is the vault cash of all commercial and mutual savings banks. The vault cash of savings banks is given quarterly by the NBER worksheets. A monthly series was constructed by linking the quarterly data to a series on total cash items of savings banks published monthly in the *Statistical Bulletin* of the Association of Mutual Savings Banks.[8] After subtracting the vault cash of savings banks from the total for all banks, the non-member holdings of currency, reported semiannually in FRB, "All Commercial Banks," were estimated by linking them to the resulting monthly total for commercial banks.[9] Non-member deposits with the Federal Reserve were taken from NBER data and estimated monthly from the item, "Other Deposits," reported in FRB, "Condition of the Federal Reserve System." The method of estimation was the same as the one employed in estimating mutual savings and non-member bank vault cash.

IV. Analysis of the Data

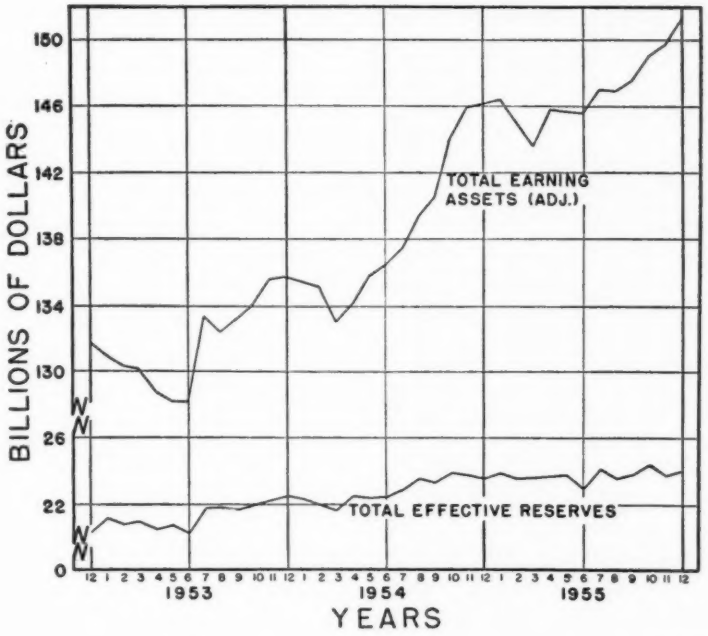
Chart I shows total commercial bank effective reserves and total adjusted earning assets monthly, from December 31, 1952, to De-

8. The ratio of vault cash to total cash items of savings banks was computed on the quarters for which both are available, and interpolated linearly for all intervening months. The ratios, so obtained, were applied to the monthly series on total cash items to produce the monthly estimates of vault cash held by savings banks.

9. The ratio of non-member holdings to the total currency held by commercial banks was computed on month-end June and December dates, interpolated linearly for intervening months, and applied to the monthly series on total commercial bank currency to yield non-member holdings.

cember 31, 1955. The two series change in the same direction—both up or both down—in 26 out of a total of 36 movements. The linear correlation coefficient between them is .95, which implies that the regression of earning assets on effective reserves reduced the original dispersion in earning assets by $(.95)^2$ or 90 per cent. The adjustment to earning assets (see Part II, D) lowered the holdings of member banks by about $10 billion, but had no effect on the net

CHART I

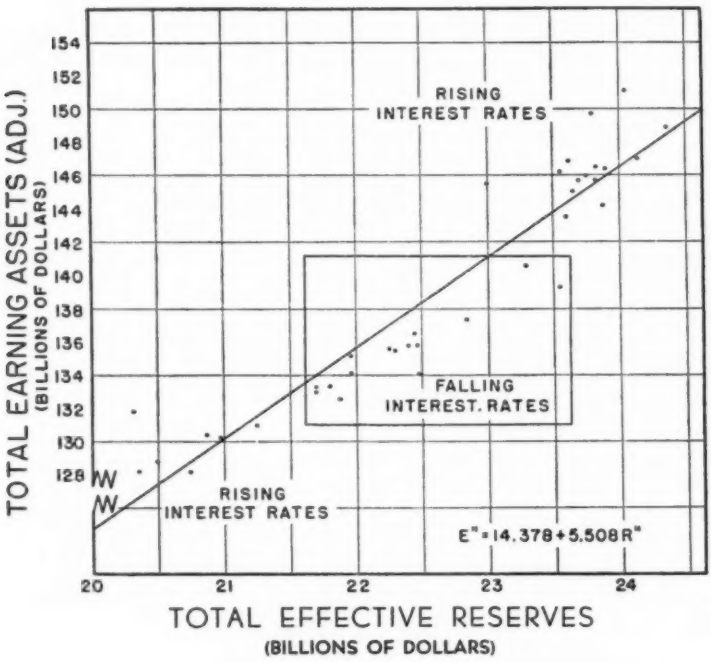


increment over the three-year interval, and influenced only slightly six monthly movements, reversing the sign of one. However, the numerical adjustments to reserves (Part II, A-C) were substantial. Unadjusted member plus non-member reserves *fall* by almost $1 billion, while effective reserves *rise* by $3.7 billion over the three-year period. Thus, the adjustments raised the increment in reserves by $4.7 billion. The adjustment for fully available reserves, $\triangle dE\ (r_r/1 - r_r)$,[10] increased the movement in the series by $.5 bil-

10. d ranged in value from $9.5 billion to $12.8, and Δd varied from $-2.0 billion to $+2.9 billion. Δd typically amounted to several hundred million dollars.

lion,[11] and the conversion of reserves to a standard reserve requirement added $4.2 billion to the increment in reserves. Although both adjustments significantly improved the correlation between month-to-month changes in reserves and earning assets, most of the over-all increase in reserves is due to the adjustment for lower reserve requirements. The average requirement behind all member bank de-

CHART II



posits was .1582 on December 31, 1952, and .1335 on December 31, 1955. This is a reduction of .0247 which, in itself, may not seem considerable. But the relative decline is .0247/.1582, which is almost 16 per cent.

Chart II presents the adjusted reserves and earning assets data on a scatter diagram, abstracting from the monthly time variable.

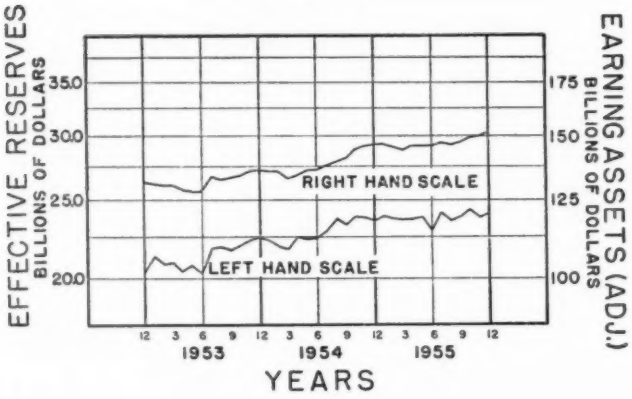
11. The entire increment of $.5 billion is attributable to increases in bank capital. Although member bank discounts and advances fluctuated widely from month to month, there was no net change in Δ (member bank discounts) $\cdot E(r_r/1 - r_r)$ over the three year period.

The least-squares straight line, whose equation is $E'' = 14.378 + 5.508R''$ (the units of both coefficients are billions of dollars), is plotted on the chart. Notice that the horizontal scale, on which reserves are measured, is eight times larger than the vertical scale. This causes the slope of the line to appear less, and the scatter of the points to seem greater, than it really is. The diagram is divided into three mutually exclusive areas, the points in which correspond to time periods during which interest rates were generally rising, falling, and rising—in that order. The first period is from December 31, 1952, to June 30, 1953, in which interest rates were rising. Some rates started to fall in May and June, but the general market decline did not occur until July. The second period, one of falling interest rates, begins in July, 1953, and ends in September, 1954. The third interval is from October, 1954, to December, 1955, during which market rates rose. Chart II reveals a marked correlation between the movement of interest rates and the response of the banking system to its effective reserves. Out of the seven points of the initial period of rising rates, five lie above the regression line, indicating a very full use of reserves in the acquisition of earning assets. During the second period, in which interest rates fell, all 15 points lie below the line. Finally, 12 of 15 points lie above the line in the last period of rising rates. This suggests that the use of bank reserves is strongly correlated with the movement of interest rates. But we cannot deduce from this that the relationship is causal, i.e., that changing interest rates *cause* bankers to alter their utilization of reserves, since the movement of interest rates and banking behavior could both be results of a common cause.

Is the trend in the ratio of earning assets to effective reserves fundamentally constant? Constancy of the ratio would be reflected in a regression line that passed through the origin. The intercept of the line in Chart II is $14.378 billion. But this in itself is not incompatible with constancy in the ratio, since the intercept depends on the particular sequence of interest movements or other accidental factors occurring during the relatively brief three-year span. A more revealing picture is given in Chart III, where the two series are plotted over time, as in Chart I, except that the vertical axes are scaled logarithmically. Earning assets are plotted with respect to the right-hand axis, and effective reserves with reference to the left-hand axis. This enables the two series to be drawn conveniently close together. The fluctuations in reserves exceed those in earning assets, which is the reverse of the situation in Chart I. The reversal

follows from the fact that the smaller absolute increments in reserves represent greater percentage increments than do the fluctuations in earning assets. The two series are quite parallel to one another, and this supports the hypothesis of constancy in their ratio. There is a slight widening, a narrowing, and a widening in the vertical distance between them during the three consecutive periods of changing interest rates described above. But both the movement in interest rates (if it is a causal factor) and general monthly variations in the propensity to hold earning assets seem to create only temporary deviations from an otherwise constant vertical distance between the two series.

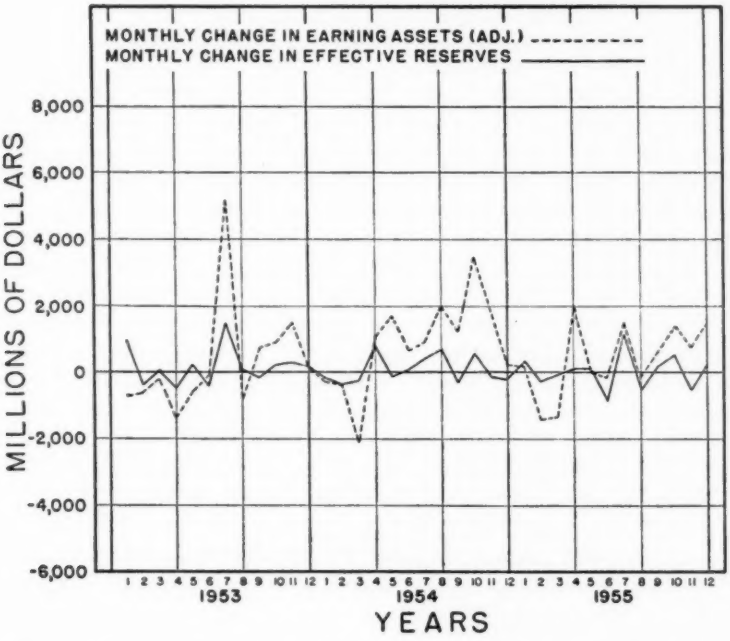
CHART III



Let us consider now the first differences in the two series, which are plotted with respect to time in Chart IV. The slope of the line in Chart II indicates that on the average the increment in earning assets is 5.508 times the increment in effective reserves. The direct functional relationship between the first differences as given by the least-squares line is $\triangle E'' = 0.366 + 1.676\ \triangle R''$. The linear correlation coefficient is .59, which is not high. But there are other evidences of association between the first differences. As noted above, 26 of 36 pairs of increments are in the same direction (agreement of movement appears in Chart IV whenever both points for a given month lie on the same side of the horizontal axis). However, the failure of earning assets to follow the direction of movement in reserves of the same month may only indicate a lagged reaction.

Out of nine months of disagreement for which we have the information, seven of the earning asset increments are in the same direction as the change in earning assets of the previous month (one of the ten pairs of increments of opposite sign occurs in January, 1953; this is the first increment in the series). Moreover, three of the downward movements in earning assets, occurring while reserves rose, were part of a continuous liquidation of earning assets from

CHART IV



January through June, 1953. The perverse decline in earning assets in August, 1953, may be regarded as a continuation of that trend, interrupted only by the lowering of reserve requirements in July, to which bankers quickly responded with additional investments. Four further increases in earning assets, accompanied by declining reserves, were part of a sustained upward movement in earning assets from April, 1954, to January, 1955. Finally, another increase in earning assets, with reserves falling, occurred in November, 1955, during a pronounced upward swing in earning assets in the last half

of that year. A cursory examination of the weekly pattern underlying the reserve changes (in FRB, "Weekly Reporting Member Banks") does not indicate that the reserve increments in these ten cases tended to occur late in the month. The lack of agreement in the two series seems to be a genuine lag.

The marked parallelism that appears between the two series in Chart IV reflects agreement in the *changes* in the first difference series. In fact, 27 of 35 pairs of *second* differences rise or fall together. When second differences are in agreement, this means that the two series tend to "hold" or "spill water" simultaneously, i.e., they either rise or fall together with the same direction of concavity, or they conform to configurations like these: ⌒⌣ ⌣⌒. An examination of nine periods during which the first differences are of opposite sign reveals that seven of the second differences are of the same sign (there is no data on second differences during the initial disagreement in first differences, which occurred in January, 1953). Thus, even when bankers are increasing or decreasing earning assets in defiance of the concurrent change in effective reserves, they are not unmindful of the rate of change in reserves, to which the rate of change in earning assets corresponds rather closely. In December, 1954, for example, earning assets rose while effective reserves fell by an amount greater than the decline of November. But the rise in earning assets was *less* than it had been in the previous month. In general, if earning assets and effective reserves are moving in opposite directions, their absolute (but not algebraic) rates of change will also be opposite. This places a restraint on the extent of disagreement in the simultaneous movement of earning assets and effective reserves.

V. Conclusion and Summary

There are three main conclusions to be drawn from this study of banking behavior in 1953–55:

1. The response of bankers to changes in effective reserves was fairly immediate; it usually occurred in an interval which is no greater than a month, and probably much less. But there was some lag in the response of earning assets to the change in reserves. One may describe the lag by saying that there was an inertia in the banking system in the sense that the responses appropriate to one month or a whole series of months were occasionally carried over to one or two months in which they were not appropriate. However, even while reserves and earning assets of a given month sometimes moved in opposite directions, there was a strong tendency for their

second differences—i.e., their rates of change—to be in agreement throughout the period.

2. The rate of interest—or the whole complex of interest rates—was reflected in banking behavior in that intensive use of reserves was highly correlated with rising interest rates, and less intensive use with falling interest rates.

3. The expression of reserves in terms of a constant capacity for use resulted in a dramatic increase in their quantity. Ninety per cent of the increase was due to the adjustment for falling reserve requirements; 10 per cent came as a result of inflating the fully available increment, $\triangle d$. Both adjustments improved the correlation between a number of monthly increments in earning assets and reserves. Whereas earning assets rise and unadjusted reserves generally decline, a sharply rising straight line described very adequately the functional relationship between earning assets and effective reserves. Moreover, the trend in the ratio of earning assets to effective reserves appeared to be constant.

The concept of effective reserves, or reserves of constant capacity, promises to be a useful tool in the analysis of banking statistics. The data for 1953–55 lend strong support to the hypothesis that bankers are concerned with the total quantitative aspect of their reserve position—as rational men would be. This is not to say that qualitative factors, such as reserve determinants, are unimportant—only that they are at most of secondary importance. In fact, the implication of this study is that reserve determinants, including Federal Reserve credit, will themselves be better understood if they are expressed in dollars of comparable and constant purchasing power with regard to earning assets. In these terms a device such as effective reserves, or a variant, is virtually indispensable if meaningful intercomparisons of banking responses are to be made over space and time.

DISCUSSION

DAVID EASTBURN:* I have had some trouble finding much to say about these three papers for two reasons. The first is that I can find nothing major to disagree with. But it's always possible to quibble on minor points. For example, Ira Scott might have made more of the role of Governments in bank earnings. Also, I am not sure that I would be willing to stick out my neck along with his in suggesting that Government securities in the long run will play only a supporting role in commercial bank portfolios. A lot can happen between now and the long run.

In the second paper Charls Walker has given a picture of discount policy during recent years. My only quarrel with it is that it seems somewhat one-sided. It presents the advantages of discounting and few of the disadvantages. Moreover, the general impression one may get from it is that discounting is a stronger, neater, more automatic and mechanical device than it really is. This has potential dangers in view of the tendency for some to feel that the Federal Reserve simply can remain "neutral" and permit market forces to regulate money. I have in mind particulary this idea: ". . . open-market policy might be designed to provide a volume of reserves just sufficient to meet seasonal requirements and possibly provide for secular growth of the money supply. . . . Then, if demand for credit increased beyond the needs for sustainable growth, with resulting inflationary pressures, banks would be prompted to obtain funds through the discount window. . . . The increased volume of discounting and the resulting pressure in the market will emerge only if demands become so strong as to warrant the additional pressure in the credit market. In essence, then, System authorities can rely on the market to confirm their judgment with respect to the business situation and premature positive actions to tighten the market can be avoided." The difficulty with all this is that one is likely to overlook the very important assumption that open-market policy is supposed to provide a volume of reserves *just sufficient* to meet seasonal requirements and provide for secular growth. Open-market policy does all the work and discounting gets all the credit.

The third paper was on "Elements of Timing and Response in the Balance Sheet of Banking." I have reason to believe that George

* Federal Reserve Bank of Philadelphia.

Horwich is an expert in timing and response. His timing in getting the paper to me has been such that I can say very little in response. However, his conclusions from statistical analysis do bear out some of the things we usually simply assume to be true. His suggestion that further work should be put into the conversion of bank reserves to dollars of constant capacity is a provocative one.

The second reason why I have had difficulty commenting on these papers is because of their apparent diversity of subject matter. But as I reread them, I became struck with a theme that runs through them all—bank liquidity. With little change in these papers, this session might well have been called something like "Recent Developments in Bank Liquidity." Much of the first paper deals with the factors which today influence the demand for liquidity by banks and the role of Government securities in meeting these needs. The second paper has to do with one method by which the banking system can secure liquidity—through borrowing from the Federal Reserve Banks. Further, it makes much of the distinctive way in which discounting affects bank liquidity. Whereas a bank selling Government securities becomes more liquid by exchanging a fairly liquid asset for a completely liquid asset, a bank discounting at the Federal Reserve obtains a liquid asset only by increasing a liability. It gets only half-hearted liquidity. It is this which is behind many of the stated advantages for discounting as a tool of policy. Finally, the third paper deals at length with the way in which banks respond to changes in one important liquid asset—their reserves. It shows that banks do, in fact, change their earning assets in response to changes in their reserve position.

Recent developments have refreshed our memory about the nature of liquidity. In some cases they suggest a return to ideas which were once prevalent; in others, they suggest that present ideas may be outmoded.

It is quite possible, for example, that bankers have changed their ideas somewhat about the importance of *maturities* for liquidity. The traditional position, of course, used to be that the short-term nature of bank liabilities required banks to hold short-term assets. This position has been greatly modified both in assets based on private debt and assets based on public debt. Over the years, banks moved into longer-term business loans and mortgages, relying on amortization out of income to provide liquidity. One senses that the recent money stringency has caused banks to look twice at this extension of maturities and to wonder whether periodic amortization

does in fact give them the liquidity they would like to have. In the area of public debt, of course, banks departed from the idea of short maturities when the Federal Reserve was pegging Government securities prices. The accord itself apparently was not enough to convince bankers that issues of all maturities—long as well as short—were not equally liquid. But by now we have all heard many bankers saying never again will they get caught holding long-term Governments. How long they will feel this way remains to be seen, but at least their present attitude reflects a return toward earlier ideas about liquidity.

Bankers recently have been impressed by the importance of *shiftability* as a source of liquidity. And they have been reminded that assets can be shifted only at a price; liquidity fluctuates with the prices of the assets they want to shift.

Part of the long-run trend toward greater reliance on government in all types of activity has been greater reliance on *government* to provide bank liquidity. Although most bankers no longer feel that they can rely on the Federal Reserve at all times to guarantee the liquidity of their Government securities, they probably do feel they can count on the Federal Reserve to meet a general liquidity crisis. But there is some question as to the attitude of banks about borrowing from the Federal Reserve to meet their more ordinary needs for liquidity. This raises anew the whole question of the tradition against borrowing—a subject that has been discussed many times before and is under discussion currently, as I note by Edward Simmons' article in the December *Journal of Finance*. Charls Walker points out that profitability often may be a more important consideration than tradition, and that the tradition probably varies widely among banks. Some students of the history of monetary policy have argued that the tradition has always been an unreliable tool.

Until very recently, banks had not borrowed extensively for many years, and much happened in our economy during that time. In the first place, under the pressure of competition, banks parted with tradition on the types of credit that they extend. Traditions *are* expendable. Secondly, after years of relatively low earnings perhaps banks have developed sharper pencils, which well might make profitability a stronger consideration in borrowing. Thirdly, the attitude toward debt in our economy has changed radically. Is it too much to assume that bankers also are influenced by changes in mores of society?

Finally, bankers generally have become more sophisticated and

understand better the job that the Federal Reserve is trying to do. Is it not more likely that banks increasingly will govern their borrowing policies in an effort to co-operate with the Federal Reserve rather than simply following tradition? This is more than a semantic question as to differences between "tradition," "policing," and "co-operation."

In any case, we still know very little about this aspect of banking —probably too little to warrant building a large part of our monetary policy around it.

My conclusions about bank liquidity tend to be optimistic. In the longer run it looks as though adequate provision has been made to meet liquidity panics and this in itself is likely to prevent liquidity panics. Moreover, in the shorter view, recent experience suggests that an anticyclical effect is being built into the economy through bank liquidity. Liquidity diminishes as booms progress and increases as recessions progress. It thus tends to restrict expansion in booms and encourage expansion in recessions.

There are four main reasons for this. One is that loans and Government securities move in opposite directions. As banks increase their holdings of Governments they become more liquid; as they sell Governments to make loans, they become less liquid. Another reason is that as booms progress, banks sell their short-term Governments; during recession, banks buy back short-term Governments. Changes in the maturity structure of bank-held debt also are influenced by Treasury policies in managing the public debt. A third reason is that liquidity automatically declines during booms and increases during recessions as prices of Government securities fall and rise. Finally, to the extent that banks are reluctant to be in debt to the Federal Reserve, borrowing during booms and repayment during recession tend to have a counter-cyclical effect.

In short, changes in bank liquidity, often so unstabilizing in the past, should tend to be more stabilizing in the future.

DONALD W. O'CONNELL:* I am glad that Mr. Eastburn has stressed in his comments certain relationships among the three papers under discussion, for with one exception I shall apply my comments to the papers as separate entities.

Taking Professor Scott's paper first, I should like to focus upon three points. The first concerns the impact of Federal Reserve discount policy upon banks' liquidity standards. The second is the

* Columbia University.

proposition that institutional developments affecting the supply of, and demand for, loanable funds will, by increasing the tendency of interest rates to fluctuate, raise the premium that banks attach to liquidity. The third is the proposiiton that, comparing 1929 with 1956, banking liquidity declined.

In examining some factors that might be expected to induce shifts in the liquidity standards of banks, Professor Scott develops the proposition that Federal Reserve discount policy is a factor not likely to exert positive influence. It is admittedly difficult to detect at a given time, much less to predict, the balance of influence that discount policy may exert. Yet I should expect that a reinvigoration of discount policy, to which Professor Scott makes some allusion and which others also believe to be observable,[1] must tend to operate restrictively upon member banks. In Mr. Walker's paper, indeed, we are given reason to expect this effect. It must, of course, reduce the confidence of bankers in being accommodated by the Reserve Banks under some circumstances and should induce downward revisions in their assessments of their liquidity.

Continuing his exposition of factors likely to influence banks' liquidity judgments, Professor Scott argues that we may anticipate a secular rise in the instability of interest rates, bringing correlative fluctuations in investment portfolio values and an increase, therefore, in the premium banks attach to liquidity. His expectation that interest rates will fluctuate more widely in the future than in the past stems from the judgment that an institutionalization of the savings process in the American economy tends to stabilize the supply side of money and capital markets, while on the demand side there may be increasing tendencies toward instability. The role of villain of the piece is played by contractual commitments to save, which are said to increase marginal propensities to consume and, hence, to accentuate cyclical fluctuations in consumption expenditure arising from any cause.

There are reasons, I believe, to regard this argument as tenuous. First, the connection between contractual commitments to save and the volume of effective saving may be weakened by dis-saving that is specifically induced by the pressures that contractual commitments place upon uncommitted income. Second, even if there should develop greater stability than heretofore in both the volume of effective saving and the proportion of national income that is saved,

1. See for example, "A Note on the Revival of Federal Reserve Discount Policy," by Edward C. Simmons, the *Journal of Finance*, XI, No. 4 (December, 1956), 413–21.

I think we must ask whether there is not developing an at least equally strong tendency for the volume of investment to show greater stability than heretofore. The possibility ought not be dismissed without extended examination of the potentially stabilizing influence of long-range investment planning by business, including the impact upon such planning of continuously renewed instalment-credit indebtedness by consumers. Third, whatever behavior interest rates may in future exhibit will not, we may presume, have been unaffected by national monetary policy. So long as the monetary authorities pursue a policy of flexibility we may expect interest rates to vary more than they did when flexibility was not a cardinal consideration of policy. If bankers expect that a flexible monetary policy will succeed in stabilizing national income, they will entertain a weaker preference for liquidity at any rate of interest than they otherwise would. Whatever may be the judgment of bankers upon central monetary policy, moreover, we need not omit consideration of that policy as a factor capable independently of modifying any undesired pressures upon interest rates, even those stemming from such deep-seated institutional changes as may occur.

The last point I should like to raise in connection with Professor Scott's paper concerns the proposition that banking liquidity declined as between 1929 and 1956. The brunt of the argument resides in the contention that bankers' very much larger holdings of call loans in 1929 than in 1956 made them much more liquid in the earlier year than in the later one. I should like to offer the view that in the earlier year bankers were deep in call loans because such loans were highly profitable and not because call loans met any particularly keenly felt need for liquidity. It may be fitting to conclude these particular comments by the general one that in this last instance, as throughout Professor Scott's paper, I find somewhat less emphasis than I should myself be inclined to place upon the importance of profit considerations in determining asset distribution at different times. None of my comments, however, would lead to the judgment that there exist reasons for graver concern over banking liquidity than Professor Scott has presented.

In my comments on Mr. Walker's paper I should like to distinguish between the discount facility and discount policy. As long as the facility exists and is permitted to be used, it may be of some help to member banks in adjusting their reserve positions. A reemergence of member bank borrowing for this purpose need suggest at the minimum only that member banks have seen fit to use the

facility, possibly because it is cheaper to meet their needs this way than in some other. An element in central bank discount policy emerges as soon as the Federal Reserve Banks decide, for example, whether to make the facility available on demand or to restrict its use in some degree.

I think it would be proper to include as part of any evidence tending to show a re-emergence of discount policy some evidence of positive decisions within the Federal Reserve Banks to foster the tradition against borrowing to which Mr. Walker refers. This aspect of discount policy has, I think, achieved new importance since 1951. The more successful it is, the less useful the discount facility becomes, and the less the System learns from its use. I have been struck, however, by Mr. Walker's brief dismissal of a closely related element of discount policy, that is, the policing by Reserve Banks of member bank borrowing in order to assure that borrowing is limited to the support of appropriate member bank lending. We often hear that discounting is a privilege, not a right. What are the principles of policy governing the granting or withholding of this privilege? I get the impression from Mr. Walker's paper that there has been no emergence into prominence of this element, at least, of discount policy. If a resurgence of vigor in central bank policy is to be welcomed, I should be interested in studies of the possible usefulness of discount policing policy, on a mutually independent basis by the Federal Reserve Banks, to meet the regionally restricted inflationary pressures that Mr. Walker would urge be met by higher discount rates in some districts than in others.

This brings in a third element in discount policy, the one on which Mr. Walker has concentrated—policy with respect to rates. Here I have two questions. First, is it appropriate to welcome a re-emergence of discount rate policy as a positive instrument of credit control if, as Mr. Walker gives us some reasons to believe, the influence of the discount rate as a price is "clouded" by the tradition against borrowing, and the effects of a change in rate upon market expectations are unpredictable? Second, is it reasonable to expect much from discount rate changes as a device to inform the market of the monetary authorities' views if discount rate policy cannot be codified and cannot be explained without reference to open-market policy, certainly something that is not easy to interpret? My own answers to these questions would be in the negative.

I have but a brief comment to make upon Professor Horwich's paper. The first point is this: the entire analysis rests upon the

assumption that bankers respond in a given way to changes in their reserve positions, from whatever causes these changes may stem. The utility of this assumption in simplifying the statistical analysis is not to be denied. It may be profitable, in complementary investigations, however, to attempt to distinguish between the impact of reserve position changes brought about by central bank policy, by cyclical movements in business not assignable to central bank policy, and by such managerial decisions within banks as those relating to revision of capitalization.

So far as the statistical method is concerned, one careful reading of it suggests that it is effectively designed to exhibit the kind of averaged response that Professor Horwich seeks to identify.

On the subject of findings, it seems to me, there is something very much worth noting. Within the limitations that I have mentioned, the finding that bankers responded during the period under review so sensitively to changes in their reserve positions may have highly important, even slightly revolutionary, significance for the views we ought to entertain on the availability, as compared with the cost, of credit. Certainly Professor Horwich's findings suggest that we may greatly have underemphasized the former's importance.

SHORTAGE OR SURPLUS OF FUNDS TO FINANCE BUSINESS?

FINANCING INDUSTRIAL GROWTH*

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THESE ARE DAYS of forward-looking optimism when statisticians and economists project ahead continuously rising standards of material welfare for a growing population, easier work burdens, shortening working days and working weeks. I sometimes wonder, in these enterprises, if we do not take too much for granted. We assume a great deal for the competence of our educational system to provide engineers and scientists. We assume a great deal for the enterprise of our children, and their ability to build on the high achievements of the past in a geometrical progression.

More particularly to the point, we assume a great deal for the availability of savings to finance all our wonderful projects. Capital is demanded on every side, and not only for industrial growth. Capital is needed for constructing schools and highways; for building more and better equipped homes; and for foreign investment in development abroad. When we add to our structure of assumptions an indefinitely rising trend of prices and construction costs, I am afraid the whole set of equations yields no stable solution.

Influenced by optimistic long-range projections of a growing economy, as well as by rising construction costs, business today is launched into the most expensive expansion program we have ever known. Outlays for plant and equipment are projected at an annual rate of $38 billion in the first quarter of 1957 against a record $35 billion for 1956. Business statisticians looking ten or twenty years ahead visualize a doubling or quadrupling of the size of their enterprises to keep in step with the procession. Capital requirements multiply, bond prices decline, and the question arises as to whether there will be money to carry through the projects.

* This paper by Norris O. Johnson and the following paper by John J. Scanlon, with discussions by Irwin Friend and Eli Shapiro were presented at a meeting of the American Finance Association in Cleveland on December 28, 1956. The program was under the chairmanship of Walter E. Hoadley, Jr., Armstrong Cork Co.

For the established business of recognized creditworthiness the question "where is the money coming from" has the ring of novelty. We thought we had that problem licked twenty years ago when the Federal Reserve Banks accepted the duty of relieving the government of concern over where the money might be coming from to finance its deficits. Controlled low rates on United States obligations induced banks to enlarge their lending activities. Insurance companies were always glad to take on corporate bonds; along with real estate mortgages, they afforded better yields than U.S. bonds.

The gradual withdrawal of Federal Reserve price support from the government securities market, begun with Treasury bills in 1947 and reaching Treasury bonds in 1951, introduced penalties on conversions of government securities into cash and awakened consciousness of limitations on the supply of loan funds. The interest rate price of money has naturally advanced. Lending institutions of all descriptions are competitively trying to maintain and augment incoming flows of funds—in other words to stimulate saving.

We are now near the close of a long period in which economic theory, under the influence of Lord Keynes's brilliant persuasiveness in *The General Theory of Employment, Interest and Money,* felt little incentive to examine the reasons why people save. Keynes's consumption function provided an attractively simple answer: "Men are disposed, as a rule and on the average, to increase their consumption as their income increases, but not by as much as the increase in their income." Thus the conclusion was drawn that a rise in general income levels would bring a disproportionate increase in savings. The saver was supposed to be ruled by inertia, saving automatically what he was supposed to save under the mechanical rule of the assumed consumption function, regardless of interest rate or depreciating value of the currency.

However appropriate it may have seemed in the dark days of the Great Depression, this theoretical construction has had tough sledding in the postwar years. The large errors involved in forecasts of postwar consumtpion on the basis of the prewar consumption-income relationship caused widespread soul searching.

Just a year ago, speaking before a Symposium of the Life Insurance Association of America, Dr. Solomon Fabricant, Director of Research of the National Bureau of Economic Research, summed up the lessons of the reappraisal that has been going on.

> There are several reasons why the theorizing of the 1930's is undergoing revision. Largely on the basis of the hard work of people like Simon Kuznets and Raymond

Goldsmith, it appears that the secular increase in real income per capita in this country—and in other countries as well—has not brought an increase in the average proportion of income saved. Indeed, the records hint that savings in relation to national income may even have fallen a bit. At any rate we are sure that no long-term rise has occurred.

Looking ahead to 1965, Dr. Fabricant noted some new factors "appearing on the scene which may cause further shifts in savings habits":

These may, indeed, add force to the factors tending to reduce the volume of savings at given levels of income. For example, the uncertainty of employment and income is surely a major reason why people put money aside for a rainy day. Consider, therefore, the possible implications, for savings, of another ten years of high and fairly stable employment, and along with this experience penetration into the consciousness of the mass of the people of the contribution of social insurance and other government programs to the promotion of personal security. When we ask what savings may be in 1965, we are asking how people will be viewing the future at that time.

This is very close to an impossible task. Who was there to say ten years ago how people today would be viewing the future?

The question, Where is the money coming from? has a special timeliness. Money is the tightest it has been since our last financial crisis, twenty-three years ago. The recent events in the Suez, adding to demands for loans to build oil tankers and requiring our Treasury to borrow to cover international commitments, is compounding the problems of the financial community in meeting credit demands.

All this pressure for credit is the financial counterpart of almost world-wide shortages of labor and materials. No doubt a turn will come, Federal Reserve policy will relax, and the financing of capital projects can be carried forward under easier conditions. But all this begs the question of the longer run outlook—say for 1965—to say nothing about the question of how much higher rates may go before they soften.

The National Bureau of Economic Research, with the benefit of a grant from the Life Insurance Association of America, is undertaking a study of postwar capital markets. I regret the necessity to undertake this discussion without the benefit of their findings.

One thing the National Bureau study assuredly will do is confirm the common knowledge that we have a heavy flow of institutionalized saving.[1] First and foremost are the life insurance companies. The rate of growth of their loans and investments gradually rose

1. Charts portraying the postwar growth and shifting composition of institutional investors' loans and investments were published in the July, 1956, *Monthly Letter* of the First National City Bank of New York.

from $4.9 billion in 1952 to $5.7 billion in 1955 but shaded off to perhaps $5.6 billion in 1956. The more rapid growth of recent years has been related to the pension movement. I see no reason to predict an annual rate of growth much beyond $6 billion in at least the early years ahead of us.

From the SEC's recent report on the 1951–54 record, I would judge that trusteed pension-fund investments are growing now at a rate of $2 billion a year and may well exceed that before a level of stabilization is reached. Earning assets of fire, casualty, and marine insurance companies are rising at a rate approaching $1.3 billion a year. This rate can be expected to increase over the years ahead as more insurable property is put in place, particularly if capital costs keep rising.

For mutual savings banks the net growth of loans and investments these last years has been holding right around $2 billion a year. Commercial bank time and savings deposits, less steady in their behavior and rather more mixed in their content, are currently growing at a rate of perhaps $2 billion a year.

Savings and loan associations have enjoyed an accelerating growth. The additional amount they had to invest in 1956 is considerably below the $5.5 billion in 1955, despite a sustained net inflow of savings. This reflects a temporary influence of repayments of borrowings from the Federal Home Loan Banks. Looking ahead we must note that the competitive advantages of savings and loan associations, in terms of rates, has been shrinking. Thus I would be surprised to see their growth accelerated further.

You will note that I am talking of annual rates of net resource growth; I will not venture into the question of gross flows. Neither will I introduce into my discussion the federal old-age and other public trust funds whose resources are largely if not exclusively invested in government securities.

As further parenthetical notes: percentage rates of resource growth have been tending to decline; and increased interest rates offered and earned have supported resource growth.

While we may have in 1956, as we did in 1955, $17 billion growth in loan and investment resources of savings institutions, about two-thirds is being swallowed up by the mortgage market. The best we can hope for this $17 billion rate is that it will be firmly sustained and tend to work moderately higher. The chances of a larger share going into corporate securities depend on the willingness of the

home-building industry, by shortening terms, to moderate its demands.

Outside institutionalized saving we have the investments people directly make in corporate securities. The SEC estimates show this as a volatile quantity, moving from $1.8 billion in 1952 down to zero in 1954 and back up to $2.4 billion in 1955. Their figures for the first six months indicate some further increase in 1956. Anyone would have to be pretty bold to predict how this figure is going to behave in the years ahead. It will be a product of the rates offered, the income tax structure, and the economic and political environment for private enterprise. Closer at hand we can observe that the radically improved levels of offered yields have provided people a temptation to buy bonds, though the strongest temptation is in the tax-exempt state and municipal category rather than corporate issues.

A similar complex of forces come to bear on the internal generation of funds within business enterprise. While figures are not available for unincorporated business, retained earnings of corporations have averaged $9 or 10 billion a year since World War II; $10 billion was the figure for 1955. Indications for 1956 are closer to $9 billion. A broad shift of corporate policy away from cash and toward stock dividends could provide an avenue for increasing the plowback though the large body of small shareholders prefer cash dividends which are less of a nuisance and free from income tax up to $50 a person per year. Meanwhile corporations are under pressure to raise cash dividends as they prudently can, supporting the market for their shares and, as it were, justifying common stocks as an inflation hedge.

We take it for granted—perhaps incorrectly—that corporations collectively are always going to make money and more money as time marches on. Under these circumstances the plowback can be made to grow.

Finally there are depreciation charges which are developing a cash throw-off of around $15 billion for corporations and $5.5 billion for unincorporated non-farm business in 1955. Expirations of accelerated allowances over these next few years will tend to dampen the natural tendency of these totals to rise. One could even describe the accelerated allowances as a temporary expedient to mitigate the differential between historical costs of old plant and the inflated costs of the new. A more fundamental solution in tax law seems to be required.

Our savings flow is large. Yet, the overstrained state of our money and capital markets tells us that it is not large enough. And this takes me toward some conclusions. We will, I think, continue to suffer chronic shortage of loan funds as long as construction costs keep climbing and as long as people act on the presumption that prices are going to keep on rising and that they had better get their projects under way. Thus the "age of inflation," bred out of cheap money, introduces an age of higher money rates. This psychology needs to be broken if rates are not to move still higher.

We have had a revolution in interest rates and it is explained by a revolution in popular psychology. The paradox of a cheap money policy is that it eventually raises interest rates. Abundant money creates labor scarcity, rising wages and prices, and increasing costs of capital projects. Full employment leads to confident spending not only of today's income but tomorrow's too. And this becomes wise policy for tomorrow's prices may be higher.

We have in the sustained strength of mortgage credit demands not only the reflections of the government's programs to spur home-building on a cheap money shoestring, population growth, and the natural desire of people for better homes; we also have a reflection of the experience that well-located and well-built homes—the more heavily mortgaged the better—have given generous capital gains. We have in the growth of consumer instalment debt—faster than the growth of personal incomes—not only an expression of the natural desire of the people to have more and better cars and appliances but also an expression of the desire of people to anticipate income gains and beat price advances.

The saver meanwhile, tired of getting the short end of the deal, is tempted to seek out "inflation hedges" in property and equity investments. To keep his deposits we have to pay better rates.

A great deal of theorizing has been done about the usefulness or uselessness of higher interest rates in stimulating saving. Whatever may have happened at times past, we can note that more and more people today are inclined to look at interest rates against the standard of price behavior. Individual financial institutions find that promotional campaigns to stimulate savings pay off. It would be odd if all their efforts had a zero total effect on the economy. In the market we can see a broadening interest among individuals as bond discounts have deepened and yields improved.

Finally, there can be no doubt that the rise in interest rates is a natural response to stringency in the capital market and that mar-

ginal borrowers are deterred by the difficulty as well as expense of raising funds.

One most obvious consideration is that, whatever we may do to spur saving, there will always be limits on the scale of investment we can afford. The fact that everybody develops so many fine plans does not necessarily mean that they can all be carried through. Some, of marginal merit, may have to be abandoned; others stretched out as a foundation for enduring prosperity. Inflation will compel the restriction if we choose not to heed the warning lights in the money market. Almost everywhere, nations are attempting to push forward with industrialization, encountering shortages of saving, and suffering the punishment of inflation for attempting to do too much too fast.

Save by exploitation of loopholes and palliative devices, the economy cannot find a solid basis for stable growth without income-tax rate reforms. The present steep progression, as personal income levels rise, will progressively suffocate the economy as a whole just as it already is suffocating opportunities for the singularly gifted and skilled individual. Tax reforms need to be specifically patterned to induce more creation of equity or risk capital. Tax laws as they now stand unduly prejudice business judgments in favor of borrowed money and that is one of our troubles; the height of income-tax rates puts much if not most of the interest cost items at the expense of the Treasury.

As *House and Home* magazine pointed out last summer, one advantage of getting away from twenty-five- and thirty-year mortgage terms is that shorter maturities generate more money for mortgage lending out of the amortization schedule.

All these actions can spur the savings flow and support confidence in the future value of money. The future of interest rates, after all, depends more than anything else on confidence in the value of the dollar. If the saver can trust the future value of money he is lending he will be satisfied with a moderate return. If he loses faith, as experiences with extreme inflation teach, he will demand exorbitant rates—or spur the inflation process by fleeing to equities.

I come out with the general conclusion that the postwar rise of interest rates represents a fundamental readjustment to a more reasonable level. The further question may be asked whether the structure of money rates and bond yields is now high enough to provide adequate incentives for saving so that slowly but surely the shortage of savings will be alleviated. I would agree that this is a

reasonable hope if we can eradicate the expectation of chronically rising prices as an accelerant to credit demands. Assuming as I would that the Federal Reserve authorities will take action from time to time to shake the veracity of this expectation, and fiscal policy is pursued along constructive lines, I should conclude that money will be available for most of our soundly conceived projects. The real challenge is one for public policy.

LONG-RANGE OUTLOOK FOR FINANCING

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FOR THE FIRST TIME in more than twenty years, the business community is in a period of sustained concern about tight money and high interest rates. During the past few years, we have watched the yield on seasoned Aaa corporate bonds, for example, rise from a low of 2.85 per cent to a recent level of over 3.70 per cent.

The cost of new money has increased even more rapidly. The average yield on new issues of high-grade utility bonds has risen from about 2.90 per cent in early 1954 to about 4.30 per cent at present. This increase is more than one and one-half times the rise in yield on similarly rated seasoned utility issues.

The rise in interest rates, particularly for new money, reflects the increase in demand for investment funds. During the first three quarters of 1956, gross private domestic investment was at an annual rate of $64 billion, about 6 per cent above the previous record high in 1955. This increase in demand for funds, due primarily to business requirements for plant and equipment, exceeded the rise in supply from internal sources of business and, as a result, there was also an increase in funds required from new corporate security issues. Demands for funds for public construction this year have also risen to new highs, with the value of public construction in 1956 exceeding the previous record in 1955 by over 7 per cent. While the increases in these sectors have been partially offset by a slackening in the requirements for new housing and for consumer finance, the net effect has been to put the capital markets under an unaccustomed strain.

During the coming decade, demand for capital will probably depend largely on such factors as the growth of the economy as a whole; rates of mechanization, improvement and replacement of plant and equipment; and changes in construction costs and in equipment and machinery prices.

Taking the first of these, I believe that the United States is in an era of dynamic expansion which, despite periodic interruptions, is likely to continue for many years. This is because so many of the factors conducive to economic growth are present in our free enterprise system.

For example, we have an economy capable of generating substantial personal savings and also internal business sources of funds for use in expanding and improving productive facilities. We may complain that the supply of capital is not always as flexible as we would like, that it does not expand as fast as we wish during boom periods. But we must concede that personal savings at a rate of $20 billion a year and combined corporate depreciation allowances and retained earnings of about $25 billion annually is a substantial supply of funds. This is over and above the funds made available by expansion of bank credit, depreciation accruals of unincorporated business, etc. Moreover, we will probably agree that with virtually full employment, and with most industries operating at or close to capacity, a more liberal credit supply this year probably would have resulted more in higher prices than in larger physical additions to plant and equipment.

In addition to generating a substantial supply of private investment funds, our economic and political environment encourages the flow of such funds into productive enterprise, as has been so well illustrated in the postwar years. At the same time, our market for goods and services is expanding as a result of a rapidly increasing population and a rising level and a broadening distribution of real income.

Population is rising at a rate of about 2.8 million a year. This rapid growth shows little sign of material slackening, so that we may well see a population increase in the next decade of about 27 million. This is about equivalent to adding two new states the size of New York and Pennsylvania to our present economy.

There is no need to remind you that population growth is not always an economic boon. In countries like Japan and India, population growth has tended to place increasing strain on limited national resources. But in this country, we have the necessary resources, supplemented by a broadly based educational system. We have also developed a dynamic free enterprise system which not only encourages large-scale investment of private capital to expand capacity and increase productivity, but which also results in the economic progress being shared by all.

The rise in real wages tends to keep pace with the rise in productivity and there is a broadening in the distribution of income. Tentative estimates indicate that the actual number of consumer units with income over $3,000 (in 1955 dollars) has increased one-third more than the increase in total number of consumer units since 1929.

Moreover, consumer units with incomes of $3,000 and over are expected to continue to rise at a more rapid rate than the total number of consumer units during the next decade.

Our people are eager to improve their material well-being. Our population is also relatively mobile. About one-fifth of the people move to different locations each year. Most of the moves are within relatively small areas. But about one-sixth of these changes of address involve movement across state lines. For example, we have a continual net shift from south to the west and to the north; and from the northeast and north central states to the west. There also continues on balance to be marked shifts from farms to urban areas. In most geographic areas, the growth is largly concentrated in suburbs around the edge of large cities rather than within the city limits. The material needs of such a growing and shifting population, in the way of household equipment and supplies and also public facilities and service establishments in the rapidly growing outer-fringe areas, are large indeed.

Significant changes are also occurring in the age composition of our population which affect demand for capital. Because of the low birth rate of the 1930's and the trend toward longer life expectancy, our population of working age is not increasing as rapidly as the population in the dependent age groups. For example, in the decade ending 1965, the percentage increase in population of working age —18 through 64—will be less than half the corresponding percentage increases in population under 18 and over 64 years of age. This means that the labor supply is likely to be relatively tight; that a tight labor supply situation may contribute to upward pressure on wage rates; and that rises in labor costs are likely to provide continued incentive for labor-saving devices and therefore for the need for capital formation.

If, with our relatively smaller rise in the population of working age, we are to continue to improve our standard of living for the population as a whole as rapidly as in the past, we must find ways to at least equal, and possibly exceed, the previous rate of increase in output per man-hour. Output per man-hour has been increasing at an average annual rate of over 2 per cent during the past forty years. Our economists believe that we will do at least as well in the next decade.

For one thing, management tends more and more to gear investments to long-term potentials rather than to short-term fluctuations in profits. Spurred by World War II and Korea, expenditures for

research are rising both absolutely and relative to the size of the total economy. Unprecedented emphasis on research is making available new processes and products. At the same time, competition is forcing prompt introduction of the new processes. McGraw-Hill surveys, for example, show that a substantial part of the manufacturing companies' capital expenditures in 1956 are for new products, and indicate that 11 per cent of manufacturers' sales in 1959 will be of products not made in 1955. Progress is also being spurred by the fact that more than ever before there is recognition by leaders of both major political parties that our nation's safety depends on supremacy in technical fields and on dynamic improvements in productive capacity. All of this holds out the possibility of an even greater rise in output per man-hour than the long-term trend for the preceding forty years.

Combining estimates of output per man-hour, and prospective increases in total man-hours worked, gives a rough approximation of the probable growth in total Gross National Product. Our economists expect that GNP is likely to rise from about $411 billion estimated for this year to roughly $550 billion in 1965 in terms of 1955 dollars. This represents an average increase of about 3.5 per cent a year.

Inflationary pressures are likely to result in generally rising prices. Average hourly earnings in manufacturing have been increasing about 5 per cent annually in recent years. This increase in wage rates exceeds the rise in productivity and consequently we are continuing to experience wage inflation. The total GNP in 1965, in 1965 dollars, may therefore be somewhat higher, perhaps as much as 15 per cent, than estimated in constant 1955 dollars.

There is no exact measure of the extent to which rising prices are increasing capital requirements. We are still replacing relatively low-cost prewar plant with plant built at today's high and rising prices. Construction costs and prices of machinery and equipment since 1950 have been increasing at an average rate of about 4 per cent, and rose about 5 per cent and 8 per cent respectively during 1956. Part of the effect of rising prices can and doubtless will be offset by the greater efficiency of the new equipment. Nevertheless, it is likely that rising prices will continue to contribute to the expanding need for capital during the coming decade.

All of these factors—the magnitude of the prospective economic expansion evidenced by rising population, increases in real wages and broader distribution of income, the unprecedented emphasis on

mechanization and technological progress, and the upward pressures on the price level—point toward heavy capital requirements.

The magnitude of the increase in private capital requirements can be illustrated roughly by the prospective rise in gross private domestic investment. It has been estimated that gross private domestic investment is likely to increase from the record high total of about $64 billion in 1956 to about $86 billion in 1965, in terms of 1955 dollars. This is a rise of more than one-third in physical volume. The increase in dollar terms will probably be even greater because of an increase in prices.

In addition to the expanding demand for investment funds from individuals and business, a substantial increase in demand for funds for public construction is also in prospect. We have already felt the effect of the needs for expanding elementary-school facilities. Much of the expansion of school facilities, however, is still ahead of us. Most of the rise in our school age population of over ten years of age still lies ahead.

Similarly, the funds required for other types of public works are also expected to increase substantially. We are all familiar with the great new highway program recently undertaken. In addition to this, substantially greater expenditures will be required for new hospitals, for new water works, for new sewer systems, and for many other types of public facilities, if our population is to be served adequately in 1965.

Thus, there are ample indications that the demand for capital—in absolute terms—is likely to increase considerably in the next decade. Viewed in the perspective of annual rates of growth, however, the rise in the decade starting in 1956 will probably be no greater than that experienced in the decade just passed.

Granting that the economic expansion in the next ten years, expressed in terms of rate of growth, may not differ much from that of the past decade, it is likely that the competition for new capital funds during this period will nonetheless be quite keen for business generally. Quite apart from rate of growth, there is growing evidence of a squeeze on profit margins so that corporations may find retained earnings a smaller source of funds than in past years. The expiration of Tax Amortization certificates will remove another internal source of funds for many businesses. And for the next few years, the current speed-up in the income-tax payment schedule will add to the fund-raising problems of industry generally.

There is, naturally, the possibility that the aggregate expansion,

replacement, and mechanization projects now visualized by individuals, corporations, and governments for the next decade, together with growing consumer demands, will exceed the capacity of the country in terms of material, manpower, and facilities. These are, of course, the real limiting factors to consider, and this is why our expenditures on research and on technological improvement are so important to our continued economic progress. If presently contemplated programs should exceed our ability to produce, some stretchout will be necessary to accommodate our demands to our physical capacity.

There is also a question as to whether the savings needed for the prospective capital outlays can be amassed without increasing the rate of personal savings. In order for the total supply of investment funds to rise to expected needs, it may be necessary to encourage and to stimulate regularized savings by individuals through many approaches. These might include: individual and employee savings in savings accounts and in government bonds; employee savings in company stock offers; stock purchase plans for individuals, such as now sponsored by the New York Stock Exchange; some amelioration of the progressively confiscatory individual income taxes; and stabilization of the value of the dollar so that savers and lenders need not fear erosion of purchasing power of money.

As noted at the outset, there has been a growing concern about the tightness of money, and this has been accompanied by a general disposition to feel that current interest rates are high. Here again, it may be useful to view current interest rates in somewhat longer perspective. Current rates are high in contrast to the artificially low rates which prevailed in most of the 1930's and in the 1940's. However, if one looks back to the years before the Great Depression—to the decade of the 1920's—it becomes apparent that current interest rates are not historically high. This is not to forecast that interest rates are going to rise substantially from present levels, but it does suggest that we should not regard the low levels of the 1930's and 1940's as the norm to which current rates must shortly return. It is perhaps more likely that we should accustom ourselves—for a period in which the demand for funds is going to be pressing hard against supply—to rates of interest fluctuating more nearly in the range of current levels. To force interest rates down by artificial means in the present situation must spell inflation. I think we can all agree wholeheartedly on the importance of avoiding inflation.

In concluding, I should like to emphasize that the indicated pros-

pective economic expansion, with the resulting rise in capital requirements, will not come about automatically. Realization of this economic potential is dependent upon a continued political and economic environment which permits our growing population to become progressively more productive. Moreover, with the multiple forces at work in our economy, it is unlikely that this expansion will proceed at an uninterrupted rate. Rather, we shall probably see periods of accelerated growth followed by periods of slackening, during which temporary dislocations will be adjusted.

I am also aware that at a time of unprecedented and widespread prosperity it is hazardous to be anticipating even greener pastures ahead. Nevertheless, I firmly believe that, in the absence of a major war, with a continued favorable economic and political environment, and with reasonable good fortune, gratifyingly substantial further economic progress is in prospect for our country.

This expansion in itself will generate substantial increases in investment funds in the form of depreciation allowances, retained corporate earnings, personal savings, and capital made available through financial institutions. However, I am inclined to believe that, because of the vigor of this expansion, demand for capital will tend to crowd supply during most of the next decade. We are likely to encounter at times suppliers' markets for capital in which the least urgent programs will be dropped or deferred. Even among soundly financed companies with good earnings records, corporate financial officers will need to be alert to develop and utilize new sources of capital. But, on balance, I find myself in agreement with Norris Johnson's view that money will be available to do most of what we are seeking to do in the decade ahead. At all events, the financial aspects of this period promise to be both challenging and stimulating for everyone concerned.

DISCUSSION

IRWIN FRIEND:* In the two very interesting papers presented at this session, Norris Johnson and John Scanlon foresee vigorous economic growth over the next decade, with demand for capital funds crowding the supply during most of this period but not in such a manner as to give rise to serious capital shortages. Both authors seem to believe that interest rates will remain fully as high as they are now, except for temporary reactions during minor setbacks in the pace of business activity. Moreover, interest rates at the present level (or perhaps even somewhat higher) are apparently regarded as desirable or necessary to encourage saving and to discourage marginal investment in a potentially inflationary period. Both Messrs. Johnson and Scanlon also mention the need for reform in our income-tax structure which they consider too progressive for the requirements of economic growth.

I shall address my brief comments on these papers first to the question of what we can say about the adequacy of funds for financing business investment and other needs in 1965, and about the closely related question of the likely level of interest rates over the next decade; and second to the desirability of higher interest rates or a less progressive tax structure for furthering economic growth and stability. These comments, as you will note all too soon, are rather meager in content—at least in part because not very much that is definitive can be said about any of these points. They may also, because of lack of time, concentrate unduly on points of difference I have with authors of the two papers rather than underline the numerous areas of agreement.

The notion which is gaining popularity in financial circles that there is likely to be a shortage of funds over the next decade presumably is based on three tenets: first, that investment demand will increase even in a relative sense; second, that saving will not increase relative to income and product; and third, that in view of these factors as well as a number of other economic and political influences, inflationary forces are likely to predominate. Such growth in investment demand is predicated on a substantial increase in the relative importance of "autonomous" investment reflecting the accelerated development of new products and new techniques; the most

* University of Pennsylvania.

significant type of evidence adduced to support this thesis is the rapid growth in research expenditures and in technology. The supposition that saving will not rise more than income is largely based on the fact that long-term historical data do not indicate any marked secular movement in the saving-income ratio, but is based to some extent also on an evaluation of recent and prospective institutional changes. The other economic and political forces which it is commonly believed will continue to give rise to inflationary pressures are too well known to require repetition.

In my opinion, there is no very satisfactory way of assessing the reliability of these assumptions or their implications for the adequacy of funds. I am inclined to think that autonomous investment may gain in relative importance in the total of capital expenditures but wonder whether induced investment may not go down sufficiently some time over the next decade to serve as an offset. Similarly, I agree that there is no evidence of a secular increase in the personal saving-income ratio—and might guess that there will be no marked change in either the personal or corporate saving-income ratio over the next decade—but I would want as a precautionary measure to point to the significant increase in personal saving in the years following 1950. (Among the major factors to be considered in appraising the likely trend in saving are the current relatively high level of both personal and corporate saving, the influence of continued prosperity and social insurance on saving for a "rainy day," and the effect of increased incomes.)

I also feel that while the forces characterizing the economy are more likely to be moderately inflationary than deflationary, one of the major reasons is the changed role of government and of public policy. In other words considering the private sector of the economy alone, there seems much less reasons for anticipating the absence of major cyclical influences on business activity. What I am saying, of course, is that though I expect cyclical disturbances in the future to be less severe than in the past, I do not expect them to disappear. If the private sector shows significantly recessionary tendencies, one of many steps the government might be expected to take would be substantial easing of monetary policy, so that under such circumstances low interest rates and "easy money" might be found together with a fairly high level of business activity. The amount of easing would depend not only on the nature of business conditions at the time—reflecting defense as well as private expenditures—but on such non-economic factors as the political party in power.

To sum up the first part of my comments, I feel we can say rather little with any degree of confidence about the adequacy of funds in 1965. It seems unlikely to me that money will be as easy to come by or interest rates will be as low during most of the coming decade as in the late thirties or forties. On the other hand, I do not find convincing evidence that the situation over the next ten years is likely to be much different from that in the past few years, i.e., in the fifties generally. Since economic conditions in the fifties were consistent with a fairly wide range of interest rates and with marked differences in "tightness" of the money markets, no satisfactory conclusion as to the adequacy of funds or interest rates in 1965 can be drawn, except for the possible inference that the present tightness is at least as likely to be improved as worsened.

If we knew why in recent months the monetary situation changed so radically, we might be able to do a more satisfactory job in explaining the future of interest rates over the next decade. My own impression is that there has not been enough change in the basic economic situation this year to explain fully what has happened to the availability of funds and interest rates. I think a marked and cumulative shift in the attitude of a relatively small number of institutional lenders reinforced by a similar psychological repercussion on borrowers has also played an important role. Interest rates to a greater extent than other prices may be subject to a considerable degree of indeterminancy and be easily influenced by psychological and other "non-economic" considerations. Another and different type of explanation of the extremely rapid rise in interest rates might be that it represents a delayed but inevitable reaction to earlier conditions or that loss of liquidity of financial institutions has a discontinuous effect on lending capacity.

After this rather discouraging analysis of what we can say about the adequacy of funds and the level of interest rates over the next decade, let us turn to an examination of the rationale for high interest rates and a less progressive tax structure in the period ahead. The usual justification for high interest rates is that they foster saving and discourage marginal investment, including expenditures on consumer as well as producer durables. So far as saving is concerned, however, there is no statistical evidence I know which gives support to the thesis that interest rates significantly affect saving. In the late twenties when interest rates were high, the ratio of personal saving to income and the ratio of retained earnings to corporate net income were relatively low; in the early fifties the reverse was true.

Likewise, economic theory is inconclusive with respect to the implications of high interest rates for saving. A rise in interest rates in a "full-employment" economy (the period we are considering) might increase saving by encouraging income recipients to refrain from consumption and thereby acquire financial assets, particularly if the rise is regarded as temporary. (In a more depressed economy it might be expected to have the reverse effect by discouraging investment.) However, to the extent that the purpose of saving is to smooth out lifetime consumption, there would be no permanent effect of higher interest rates. Moreover, an increase in interest rates might conceivably lower saving even in a full-employment economy by providing the same standard of living with the accumulation of a smaller amount of assets, or perhaps less likely by fostering increased dissaving by the aged (to the extent that their wealth is in the form of assets which will benefit by the increase in yields) without any marked effect on the saving of the young.

There are many other ways in which changes in interest rates might affect saving but perhaps the most important is the effect of such changes on the distribution of income. If, for example, higher interest rates meant a redistribution of income with a larger share for the upper income classes, one could argue that the national saving would be increased as a result. Unfortunately, we do not know much about the effect of changed interest rates on income distribution nor about the long-run relation between income distribution and saving. (Proponents of the recently developed permanent income theories of saving, it might be noted, would deny there is any relation between income distribution and saving.)

That higher interest rates discourage investment seems to be a safer generalization at our present stage of knowledge than any assumed relation between interest rates and saving. Even here, however, there are a number of complications. In the short run, rising interest rates may stimulate the demand for funds because of the fear of even more costly financing. Abstracting from the problem of anticipations, we do not know the magnitude of the longer-run effect (i.e., the "normal" interest elasticity of investment) or how different types of investment are affected. Our evaluation of the performance of interest rates compared with other economic measures in deterring marginal investment would presumably be influenced by information both on the nature of the interest elasticity of investment and on the degree of income redistribution which is effected.

Finally, I would like to question the reasons given by Mr. Johnson and Mr. Scanlon as indicating a need for a less progressive in-

come tax structure. The former says, "The present steep progression . . . will progressively suffocate the economy as a whole just as it already is . . . the singularly gifted and skilled individual." The latter calls for "some amelioration of the progressively confiscatory individual income taxes" to stimulate saving. I wonder what evidence there is that unusually gifted or skilled individuals work less hard or less productively as a result of our present tax structure. Certainly little support is given this thesis either by the Harvard studies of the effects of taxation on business or by the historical trend in productivity. I am inclined to agree that less progressive taxation, in a full employment economy, would probably stimulate saving. However, even here, we should note that this conclusion can be questioned on theoretical grounds (again by proponents of the recent permanent income theories) and on the empirical grounds that the aggregate saving-income ratio does not seem to bear any obvious relation to the progressiveness of the tax structure. (I might raise but will not discuss the question of the effect of less progressive taxation on investment.)

To sum up the second part of my comments, I feel that the case for the desirability of high interest rates, under the assumption of continued "inflationary" pressures, will probably have to rest on its deterrent effect on investment, while the case for a less progressive tax structure must rest on its stimulus to saving. We know all too little about the quantitative importance of either effect. It is to be hoped that research will be directed to answering these and the other important questions which have been raised at this session, and to illuminating the policies which are appropriate for the period confronting us.

ELI SHAPIRO:* Let me state at the outset that the role of a discussant in a panel like this is substantially easier than that of the contributors of major papers. The unfortunate fact is that peering into the future is essentially in the alchemy stage. To paraphrase Simon Kuznets,[1] the difficulty of establishing an orderly pattern of long-term change lies in the absence of an effective theory or even of working hypotheses. Thus, a great deal of data is needed to discriminate among the many models that can be used to project long-term growth. The data are not available. What data are available make it

* Massachusetts Institute of Technology.

1. Simon Kuznets, "Concepts and Assumptions in Long-Term Projections of National Product," *Lone Range Economic Projections*, "National Bureau of Economic Research Studies in Income and Wealth," Vol. 16, 1954.

difficult to choose among the simple models used to forecast secular trends.

In view of the widespread interest in economic growth, I think the subject of this session is important. Finance as the pecuniary manifestation of real forces plays an important role in facilitating or retarding economic growth. Therefore, we ought to have some measure, however rough, of the retarding or facilitating prospects of finance upon growth. We are witnessing real tightness on the financial side at present. More and more people are becoming concerned that present forces may be harbingers of the future.

Norris Johnson refers to the present capital market study being conducted by the National Bureau of Economic Research and implies that, if the results of this project were available, they would enable us to answer the question which is the subject of this panel. I would like to rephrase this expectation, and I hasten to add that these are my own observations.

The long-range projects on saving by Raymond W. Goldsmith and the capital formation and financing project under Simon Kuznets, together with the more limited temporal study of the capital markets, should add substantially to our historical knowledge of changes in the supply of, demand for, and terms on which funds have been made available to finance real investment. However well executed these projects are, they will not provide us with all the necessary information to answer the question that has given rise to this session of the American Finance Association.

An analogy to gross national product forecasting may serve to highlight my point. Thirty years ago, only the most courageous souls tried to estimate current gross national product. An even more minuscular group of "foolhardy" souls made gross national projections for the year ahead. With the development of a historical body of information on gross national product, it was possible to discern relationships and to establish patterns among these relationships. As a consequence, the horizon of Gross National Product forecasters was broadened. In the postwar decade, annual Gross National Product forecasts became commonplace and came to be viewed as essential data for determining government policy prescriptions as well as guides for management decisions in the private sector of the economy. This is not to say that Gross National Product forecasts are to be viewed as accurate, scientific predictions; they still contain large elements of uncertainty. The economics profession still has a long way to go before we can narrow the confidence limits that

should be attached to Gross National Product forecasts. Despite this significant shortcoming, aggregative economic forecasts have become a useful addition to the kit of tools available to government and business in their respective activities.

I anticipate that, as a consequence of the completion of the aforementioned projects on saving, capital formation, and the capital market, interested professionals will be able to develop relationships and behavior patterns among the relevant variables which will improve our capacity to make better guesses on the availability of funds at later meetings of the American Finance Association.

I, too, agree with the conclusion of both papers that funds will be forthcoming to finance investment. But, I agree for other reasons! The national income identity being an identity, saving will always equal investment *ex post*. The question at issue is how much investment and on what terms will the funds be forthcoming to finance that level of investment. I have already indicated that, given the present state of the art, the answers to these questions are, at best, judgments and no more than that!

One difficulty in commenting on the papers is my own inability to systematize the quantities that are presented by both Messrs. Johnson and Scanlon. However, I infer from much of the information that is contained in their papers that the Gross National Product forecast of the Joint Committee on the Economic Report, "Potential Economic Growth of the United States During the Next Decade," is basic to the discussion.

In order to handle this problem, I will try to keep my references to figures to the barest minimum. Using 1955 dollars, which, by the way, assumes no inflation over the decade, the Joint Committee projection entails a rise in the gross national product from $375 billion in 1953 to $550 billion in 1965. This amounts to a 3.2 per cent per annum increase in the Gross National Product over the period. The 3.2 per cent per annum increase in the Gross National Product is distributed as follows: consumer expenditures rise at 3.5 per cent per annum; gross private capital formation rises at 4.2 per cent per annum; government expenditures rise at 1.1 per cent per annum.

The per annum per capita increase in real Gross National Product is 1.8 per cent—roughly identical with the average rate of increase over the last seventy-five years. A 1.4 per cent annual increase in civilian employment is offset in part by a 0.8 per cent annual decrease in hours per worker. Thus, the Joint Committee report assumes a net increase of .6 per cent per annum in man-hours put in. Output

per man-hour is projected at a 2.5 per cent annual increase, based on the assumption of a high level of investment in plant and equipment and assumed increases in technological know-how.

The proportion of gross private capital formation to Gross National Product increases from 14 per cent in 1953 to 15 per cent in 1965. Net capital formation rises from 6.6 per cent of net national product in 1953 to 6.8 per cent of net national product in 1965. Housing starts in 1965 are projected at 1.4 million.

A high level of private capital formation and a low rate of saving—6 per cent of disposable income—is assumed. The Joint Committee's projection involves a high level of investment and, therefore, a high level of financing need. It also is a model which involves a low level of saving which should make for financing difficulties. It is compensated for in part by the assumption of balance in the federal government's budget and state and local government deficits requiring financing at about the levels now prevailing. The increase in net capital formation of $11 billion in 1953 prices is assumed to be financed by an increase of over $3 billion in personal savings, an increase of some $2 billion in corporate savings and a reduction in government deficits of $5 billion.

If we turn to the corporate sector, we find a substantial need for funds primarily to finance the plant and equipment outlays contemplated. Funds generated internally by business out of retained profits and depreciation and depletion will continue to supply the bulk of the needs of corporations for financing—over two-thirds of total needs. Net new issues of securities may amount to as much as $7 billion with debt issues dominating the total. This sum is not perceptibly higher in absolute amount than most of the postwar years in which high levels of plant and equipment outlays were experienced.

Given this projection of economic activity in the decade ahead, I am inclined to believe that interest rates will be somewhat lower than those currently prevailing. This is not to say that we will return to the level of interest rates that prevailed in the decade of the 1940's. Rather, I am inclined to believe that the average of rates for the first five years of the 1950's is the most reasonable fit for the projection of economic activity in the decade ending 1965 as enumerated above.

Both Mr. Johnson and Mr. Scanlon talk about the desirability of averting inflation and depression. In the main, these objectives probably represent the hopes and aspirations of most members of our society, when discussed in the abstract. But when we get to discuss particular policies, there is an understandable but nevertheless dis-

heartening support of specific programs by interested parties which when aggregated lead to a social goal quite inconsistent with the basic stability objective mentioned above.

We now stand at the threshold of an era in which there is widespread belief that our future economic growth will be even greater than was our past. We want high standards of living, including leisure. We want high levels of private capital formation to provide economic growth. We want high levels of national security outlays to insure our ability to contain the Russians in a cold war and to enable us to withstand attack should the world situation deteriorate. We want social capital formation on a grand scale. Moreover, we purport to desire to avert inflation and depressions.

Can we get all of these things?

The neo-Classical view on this matter was that an increase in the supply of saving stimulated capital formation by causing the rate of interest to fall while the willingness to save effectively released resources which were necessary to permit the production of capital goods to take place.

For a relatively short span of years—the twenties in England and the thirties in the United States—a new view appeared. Savings need not finance investment but could go into hoards. Thus unemployment would exist. Given unemployment, capital formation could take place without reducing consumption (or saving) since the capital goods production could be obtained by absorbing otherwise unemployed resources (both men and material).

While this point of view may have had merit for the aforementioned periods, the longer view of economic history lends credence to the neo-Classical position which—to restate it in another way—is that consumption and investment are alternate uses of income. Given the present high levels of employment and income, if we want investment we must save—or abstain from consuming—providing, of course, that we are serious in our desire to avoid inflation. Put it yet another way, given high levels of employment we cannot have our cake (economic progress through capital formation) and eat it (do not save).

In common with many others, I believe an improvement in our understanding of the financial system is eminently desirable. Precisely what form of investigation is necessary to accomplish this objective is now being debated in heated fashion. One thing stands out in my opinion. Regardless of the form of the investigation of our financial system and independent of the findings, the simple arithmetic of

capital formation is so far removed from understanding by the public that little progress in changing the financial machinery can be looked for as a result of such an investigation. What is called for at once is a program designed to remove much of the mystery from the capital formation process. An improvement in society's understanding of this process should result in more enlightened views of the costs implicit in attaining the objectives we have laid down for ourselves in the future.

BUSINESS PROCEEDINGS

REPORTS OF THE OFFICERS

At the annual meeting of the Association on December 29, 1956, it was voted to publish the minutes of the annual business meeting and the annual membership and financial reports in the May, 1957, issue of the *Journal*. There is presented below the minutes of the annual meeting, prepared by Miss Madeline McWhinney, acting secretary.

MINUTES OF THE ANNUAL BUSINESS MEETING OF THE AMERICAN FINANCE ASSOCIATION

Hotel Cleveland, December 29, 1956

The meeting was called to order by President Upton at 4:45 P.M. As a first order of business a motion was made and approved to omit the reading of the minutes of the previous meeting.

The President then requested approval for the actions taken by the Board of Directors at its meeting on December 27. They were as follows:

Ad hoc Committee on Finance: This Committee, composed of Edward E. Edwards, Paul M. Van Arsdell, Marshall D. Ketchum, and Miller Upton, made two recommendations to the Board. First, it recommended that no change be made in the dues of subscribing and active members, but that revenues be boosted through a drive to increase membership following the lines of a regional membership plan worked out by George Hassett. It also felt that the minimum subscription for institutional members might well be raised to $50, but no specific recommendation along this line was made. Second, it recommended the adoption of a regular auditing procedure for the Association's books. The Board approved both recommendations and decided that the incoming President each year should appoint a committee to audit the books for the previous year and make its report at the following annual meeting.

Institutional memberships: The Board decided that this year's incoming president should appoint a permanent chairman of a committee to solicit institutional members and to work out a program for developing a closer interest in the Association on the part of such members. The chairman is to be free to appoint his own committee and he will have authority to use a special committee letterhead paper. The Board further agreed that the President of the Association should personally follow up delinquencies of such members and welcome new institutional members.

Budgeting procedures: The Board decided to adopt a formal budgeting procedure whereby the Secretary-Treasurer would annually circularize the *Journal* Editor, the Advertising Manager, and all committee chairmen concerning their

expectations as to receipts and expenditures for the coming year, and submit a proposed budget to the President for his review no later than December 15. The budget, as finally developed by the President, would then be submitted to the outgoing Board of Directors for recommendations and to the incoming Board for approval.

Membership drive: In keeping with the action taken with regard to the *ad hoc* Committee's recommendations, the Board eliminated the office of Membership Chairman. The new regional program for expanding membership will be under the direction of the Secretary-Treasurer. Regional chairmen will be appointed for each of the major geographical areas of the country and they in turn will appoint as many assistants for their area as they feel desirable.

Publication of the minutes of the annual business meeting: The Board voted to publish the minutes of the annual business meeting and the annual financial and membership reports in the May issue of the *Journal* along with the proceedings of the annual meeting.

Regional activities: The President reported on the activities of the regional groups of the Association. During the past year Francis Calkins, of Marquette University, replaced Paul Van Arsdell as chairman of the Midwestern Regional Group. The other members of his committee are John Bowyer and Sterling McMillan. The Boston group held one meeting during the year under the chairmanship of Eli Shapiro, but no meeting was held in New York. R. E. Rowton is in the process of organizing a Southern California group.

Reports: The annual reports of the Secretary-Treasurer, the Editor, the Advertising Manager, and the Chairman for Student Affiliates were read and approved.

Actions of the officers: The Board approved the actions of the officers during the past year.

The members approved the actions of the Board in these respects.

The annual financial and membership reports of the Secretary-Treasurer were then distributed by Miss McWhinney, acting Secretary-Treasurer in the absence of Professor Hassett. A motion to accept them as submitted was made and approved. The new membership program was outlined and it was suggested that any member who would like to serve as regional or area chairman contact Professor Hassett.

Professor Fraine, Editor of the *Journal of Finance,* distributed and discussed the joint report of the Editor and Associate Editor. During 1956 the ratio of acceptances to the total number of articles evaluated was lower than in 1955. This resulted from an unusually heavy inherited backlog, from attempts to keep printing costs within the budget, and from a policy of freeing manuscripts for publication elsewhere when publication in the *Journal* might be seriously delayed. Considerable progress was made during the year in eliminating the backlog of accepted articles. For budgetary reasons it was felt necessary to eliminate from publication of the proceedings of the 1955 annual meeting the discussions and the two longest papers. The published articles were not as well balanced in number among the

various fields covered by the Association as the Editors would have desired. The imbalance was the result of differences among the fields in the number of publishable articles submitted. Professor Fraine then explained the procedure for accepting or rejecting articles. A large panel of scholars is relied upon for the initial screening. An article is sent to at least two of them for reading and if the reports of these referees are encouraging, the manuscript is then read by the Associate Editor. If he recommends publication, it is read by the Editor, who makes the final decision and notifies the author. The effect of this procedure is that all articles published in the *Journal of Finance* have been approved by at least three readers. After expressing appreciation for the co-operation of the panel of referees, the Editorial Board, the Book Review Editor, and the Advertising and Business Managers, the Editor reminded the membership that it is *their* journal and that it can be only as good as the material they submit. He said the editors would welcome not only the submission of manuscripts but also ideas for improving the editorial policy. A motion was made and approved for the acceptance of the Editor's report.

In the absence of Ben Sutton, chairman for Student Affiliates, Professor Fraine made his report. During 1956 three new units were chartered bringing the total number of active affiliates at the end of the year to twenty-two. Two new charters were pending, Villanova University and the University of Alabama, at the year end and will probably be issued shortly. Any member of the Association who would be interested in sponsoring such a unit should contact Ben Sutton, University of Minnesota. This report was approved as presented.

Since the Advertising Manager, Erich A. Otto, was also unable to be present, Professor Fraine presented his report. The AFA *Journal* is now sufficiently well established in the advertising program of the major publishers that they submit material of their own accord. However, there seems to be little prospect at the present time of securing advertisements outside the publishing industry; companies either require a wider market or believe they are already doing a sufficient amount for the Association by holding an institutional membership. The total number of advertisers in 1956 was unchanged from 1955 at 14, but the number of advertisements placed increased from 32 to 42, and a further increase is projected for 1957. This report was approved as presented.

The President asked for ideas from the floor for improving attendance at the Association's annual business meeting since he was

sure that the current attendance was not indicative of membership interest. He also pointed out that it had been customary to hold the meeting at 4:30 P.M. on the third day of the convention. After a discussion of various attendance days and hours, a motion was made and approved that the incoming Board of Directors determine a more appropriate time for the annual business meeting.

A motion was made and approved that the Secretary-Treasurer write appropriate letters of appreciation to the following for their services to the Association during the past year.

C. Austin Barker, General Chairman, Committee on Local Arrangements for the Cleveland meeting; Gilbert H. Palmer, Chairman, Local Arrangements for the AFA; and their associates for their work in arranging the 1956 annual meeting

The Hotel Cleveland for the accommodations furnished

Edward E. Edwards, who concludes his term on the Advisory Committee and, therefore, severs his official connections with the Association, for many years of service to the Association

Donald S. Thompson and Wilbur Fulton for filling so effectively the breach left by Viscount Harcourt's withdrawal as the luncheon speaker

Marshall D. Ketchum, the outoing directors, David M. Kennedy, Clay J. Anderson, Lester V. Chandler, and Walter E. Hoadley, Jr., for their fine programs and their contributions to the Association, and James J. O'Leary and Elmer Wood for organizing sessions for the convention

Harold G. Fraine for his work with *The Journal of Finance*

Miller Upton for his contributions to the Association as President.

A motion was made and approved to thank the Secretary-Treasurer for his services during the past year.

The President added his personal word of thanks for the work of this group of people, and the *ad hoc* Committee on Finance and the Editorial Board.

The President next asked the acting Secretary-Treasurer to announce the results of the election for new officers and directors. They are as follows:

President	Marshall D. Ketchum
Vice-President	Lester V. Chandler
Directors	
Business Finance	John J. Scanlon
International Finance	Samuel E. Braden
Investments	Paul M. Van Arsdell
Money and Banking	Charls E. Walker

After being introduced by President Upton, the new president took the chair. He thanked last year's officers and directors for their interest in and contributions to the Association, and most particular-

ly the outgoing president, Miller Upton. He said that for the coming year his interests were memberships and manuscripts. He hoped to encourage the drive for new membership since the services of the Association can be extended only as its financial resources expand and to continue to improve the *Journal*.

In response to a request for any new business to be brought before the meeting, the suggestion was made that any up-to-date membership list would considerably facilitate the membership drive. The President said he would have the incoming Board of Directors discuss the proposal.

Since no further business was brought before the meeting, the President declared it adjourned at 5:30 P.M.

Respectfully submitted,

MADELINE MCWHINNEY
Acting Secretary-Treasurer

FINANCIAL REPORTS

The following reports present the financial position of the Association at the close of the fiscal year on November 30, 1956. These reports were prepared by the secretary-treasurer, George E. Hassett, Jr., for presentation at the annual business meeting of the Association in Cleveland on December 29, 1956.

ASSETS

Cash		
On deposit in First National City Bank, New York	$3,620.84	
On deposit with University of Chicago	800.00	$4,420.84
Accounts Receivable		
Advertising, December, 1956, number of *Journal of Finance*		600.00
		$5,020.84

LIABILITIES AND NET WORTH

Liabilities		
Accrued expenses, *Journals of Finance*, December, 1956, number	$2,400.00	
New York dinner account	526.15	
Deferred income—Prepaid Dues for 1957	1,632.29	$4,558.44
Net Worth		462.40
		$5,020.84

Statement of Operations, December 1, 1955 to November 30, 1956

Income

Membership and Subscriptions	
Active memberships	$ 5,631.15
Subscribing memberships	1,480.00
Institutional memberships	1,465.00
Library subscriptions	1,292.82
Student subscriptions	622.75
Total	$10,491.72
Other Income	
Journal sales	$ 315.61
Advertising	2,120.40
December meeting—net	209.62
Miscellaneous	100.00
Total income	$13,237.35

Expenses

Secretary's Office	
Stationery	$ 247.86
Postage	402.04
Promotion	349.13
General expense allowance	788.46
Billing and balloting	316.57
Miscellaneous	217.09
Total	$ 2,321.15
Journal and Editorial	
Printing	$ 8,728.67
Mailing and postage	292.16
Addressograph	162.01
Reprints—net	268.44
Stationery	281.01
Editing, proofreading, etc.	460.19
Miscellaneous	70.21
Total	$10,262.69
Total expenses	$12,583.84
Net income	$ 653.51

The statement of operations shows that the Association ended the year with an excess of income over expenses of $653.51. Income for the year exceeded our budget by $1,537.35; actual expenses were $1,483.84 in excess of budgeted expenses; and our budgeted net income of $600.00 was exceeded by $53.51.

The balance sheet discloses that, after allowances for the anticipated cost of the December, 1956, issue of the *Journal* and for the prepayment of dues for 1957, the Association had a net worth at the end of the year of $462.40.

Much credit is due last year's officers who, in a year of rising costs, succeeded in carrying on the work of the Association within the confines of the budget and without diluting the high standards under which the Association has operated. It is obvious, however, that this pace cannot be maintained indefinitely. The outlook for

MEMBERSHIP AND SUBSCRIPTION RECORD

	Members				Subscriptions				Grand
	Active	Subs.	Inst.	Total	Library	Student	Exch.	Total	Total
December 1, 1955.....	1,056	110	53	1,219	358	177	27	562	1,781
Changes during year:									
Drop.....	−80	−10	−10	−100					−100
New.....	+202	+12	+ 8	+222	+73	+155		+228	+450
Shifts....	−31	+36		+5					+5
November 30, 1956..	1,147	148	51	1,346	431	332	27	790	2,136

1957 is for still higher costs of publishing the *Journal*. The officers have confidently budgeted an increase in income to finance these additional costs. We hope that the increase in revenue will come from an enlarged membership. In 1956 an *ad hoc Finance Committee* seriously considered recommending to the Board of Directors that the membership dues be increased. It was finally decided, however, to undertake to meet the problem by inaugurating an aggressive campaign for new members. If this fails, the only other alternatives are an increase in membership dues or a compression in the size of the *Journal*.

Following is the membership report of the Secretary-Treasurer.

ORGANIZATION FOR MEMBERSHIP PROMOTION

The 1956 officers set up a regional organization of the United States and Canada. In each of the twenty-one regions we shall have a chairman. Each chairman will in turn appoint a number of committeemen. It will be the function of the committeemen to undertake a continuing survey of a specific area and to send to the Secretary-

Treasurer of the Association lists of those who would profit from membership in the Association and who should be invited to join. George Hassett last year set up the regional organization east of the Mississippi. The invitations he sent out asking certain of our members to assume chairmanships in these regions met with enthusiastic response. We are publishing the names of regional chairmen where acceptances have been received. We are now working on the area west of the Mississippi. We hope to be able to publish in the September issue of the *Journal* the complete list of regional chairmen and their committees.

The officers solicit the assistance of all members of the Association in this membership campaign. If you will participate, please write us, communicating either with the Secretary-Treasurer or with the President. It is not necessary to wait for the regional organization to begin functioning. We suggest that you determine who in your locality are not now members, making use of the 1954 Membership Directory and the supplemental membership list published elsewhere in this issue, and send in your nominations for membership to the Secretary-Treasurer.

Region 1: Maine, New Hampshire, and Vermont
Chairman, PHILIP H. LOHMAN, University of Vermont, Burlington, Vermont

Region 2: Eastern Massachusetts (Barnstable, Bristol, Dukes, Essex, Middlesex, Nantucket, Norfolk, Plymouth, and Suffolk Counties) and Rhode Island
Chairman, WALLACE P. MORS, Babson Institute of Business Administration, Babson Park 57, Massachusetts

Region 3: Western Massachusetts (Berkshire, Franklin, Hampton, Hampshire, and Worcester Counties); eastern New York State (Jefferson, Lewis, Oneida, Madison, Chenango, Broome Counties and east, except metropolitan New York); and Connecticut
Chairman, JAMES P. LUDTKE, School of Business Administration, University of Massachusetts, Amherst, Massachusetts

Region 4: Metropolitan New York

Region 5: Delaware, New Jersey and eastern Pennsylvania (Third Federal Reserve District)
Co-Chairmen, DAVID H. MCKINLEY, Department of Economics, Pennsylvania State University, University Park, Pennsylvania,
FREDERICK C. RIECK, The Philadelphia National Bank, 421 Chestnut Street, Philadelphia, Pennsylvania

Region 6: Maryland, Virginia, and District of Columbia
Chairman, CARL F. BEHRENS, Route 1, Herndon, Virginia

Region 7: North Carolina, South Carolina, and Georgia
Chairman, FREDERICK G. JOERG, Department of Economics, Duke University, Durham, North Carolina

Region 8: Florida (except west of Tallahassee) and Puerto Rico
Chairman, WILLIAM M. HOWARD, University of Florida, Gainesville, Florida

Region 9: Western New York (Oswego, Onondaga, Cortland, Tioga Counties and west) western Pennsylvania (Fourth Federal Reserve District); and West Virginia
Chairman, JESSE BURKHEAD, Department of Economics, Syracuse University, Syracuse 10, New York

Region 10: Ohio, Michigan, Indiana, and Kentucky
Chairman, GILBERT W. COOKE, Bowling Green State University, Bowling Green, Ohio

Region 11: Illinois and Wisconsin
Chairman, BION B. HOWARD, School of Commerce, Northwestern University, Evanston, Illinois

Region 12: Alabama, Mississippi, Florida (west of Tallahassee) and Tennessee
Chairman, WILLIAM L. MILLER, Department of Economics, Alabama Polytechnic Institute, Auburn, Alabama

Region 13: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas

Region 14: Arkansas, Louisiana, Oklahoma, Texas, New Mexico, and Arizona
Chairman, LEWIS E. DAVIDS, SR., Department of Business Administration, Agricultural and Mechanical College of Texas, College Station, Texas

Region 15: Montana, Wyoming, Colorado, Idaho, and Utah
Chairman, FRED R. NIEHAUS, School of Business, University of Colorado, Boulder, Colorado

Region 16: Washington, Oregon, and Nebraska
Chairman, WESLEY C. BELLAINE, School of Business Administration, University of Oregon, Eugene, Oregon

Region 17: California, Nevada, and Hawaii
Chairman, R. E. ROWTON, 534 W. 6th St., Los Angeles 14, California

Region 18: Quebec, New Brunswick, Nova Scotia, Newfoundland, and Labrador

Region 19: Ontario

Region 20: Manitoba and Saskatchewan
Chairman, RALPH F. HARRIS, Director, School of Commerce, University of Manitoba, Winnipeg, Manitoba

Region 21: Alberta and British Columbia
Chairman, L. G. J. WONG, Chairman, Finance Division, Faculty of Commerce and Business Administration, University of British Columbia, Vancouver, British Columbia

MARSHALL D. KETCHUM
President

REPORT OF SECRETARY-TREASURER

The following report of the Secretary-Treasurer's activities will be supplemented with election results and the January letter reporting the highlights of the annual meeting.

Our balance sheet which includes a reserve for expenses for the December issue of the Journal of Finance now discloses a black surplus! The balance sheet comparison follows:

Balance Sheet

November 30, 1956–1955

Assets	1956	1955
Unassigned cash	$ 1,462.40	$ 808.89
Dues prepaid	1,632.29	624.87
New York dinner account	526.15	526.15
Deposit University of Chicago	800.00	800.00
Total	$ 4,420.84	$ 2,759.91
Liabilities		
Dues prepaid	$ 1,632.29	$ 590.87
New York dinner account	526.15	526.15
Estimated *Journal* expense December issue—net of advertising	1,800.00	1,742.70
Total	$ 3,958.44	$ 2,859.72
Surplus (or deficit)	462.40	(99.81)
Total	$ 4,420.84	$ 2,759.91

Unassigned Cash Reconciliation

Opening balance December 1	$ 808.89	$ 390.91
Net Income	653.51	417.98
Closing balance November 30	$ 1,462.40	$ 808.89

So that we more clearly match current receipts and expenses, the financial statements are adjusted to be on an accrual basis.

Income and Expenses for Years Ended November 30

Income	1956	1955
Membership and subscriptions		
Active memberships	$ 5,631.15	$ 4,977.42
Subscribing memberships	1,480.00	1,050.00
Institutional memberships	1,465.00	1,075.00
Library subscriptions	1,292.82	858.95
Student subscriptions	622.75	354.00
Total	$10,491.72	$ 8,315.37
Other income		
Journal sales	$ 315.61	$ 277.53
Advertising	2,120.40	1,797.80
December meeting—net	209.62	316.93
Research project	.....	275.00
Miscellaneous	100.00	31.69
Total income	$13,237.35	$11,014.32

EXPENSES

Secretary's office		
Stationery	$ 247.86	$ 83.56
Postage	402.04	395.65
Promotion	349.13	280.47
General expense allowance	788.46	700.00
Billing and balloting	316.57	233.94
Miscellaneous	217.09	42.16
Total	$ 2,321.15	$ 1,735.78
Journal and editorial		
Printing	$ 8,728.67	$ 7,090.88
Mailing and postage	292.16	249.46
Addressograph	162.01	188.32
Reprints—net	268.44	586.72
Stationery	281.01	247.83
Editing, proofreading, etc.	460.19	446.36
Miscellaneous	70.21	16.99
Total	$10,262.69	$ 8,826.56
Total expenses	$12,583.84	$10,562.34
Net income	$ 653.51	$ 451.98
Dues paid ahead—not included	$ 1,632.29	$ 590.87

All known bills are paid. Included in printing and mailing costs are estimates for the December issue of the *Journal of Finance* offset by estimated advertising income. The basis of estimate is the cost of last year's issue.

The increase in library subscription rates will be reflected in next year's income statement.

MEMBERSHIP

Total membership moved upwards. It is a pleasure to report increases in most categories but most gratifying is the student increase

MEMBERSHIP AND SUBSCRIPTION RECORD

December 1–November 30	Active	Subscribing	Institutions	Libraries-Copies
Begin. Year	1,056	110	53	358
Drop	− 80	−10	−10	...
New	202	12	8	73
Shifts	−31	+36	....	...
End Year	1,149	148	51	431

Total	1,777
Students—from 177 in 1954–55 to	332
Exchange	27
Total copies distributed	2,136

from 177 to 332. Many individuals were responsible for one or more new members.

New members since August 1 are not included.

For various reasons, fourteen members are carried past due and there are twenty-one library subscriptions being billed. The latter subscriptions were usually forwarded by agencies.

Your helpful co-operation is appreciated.

Respectfully submitted,

GEORGE E. HASSETT, JR.
Secretary-Treasurer

AMERICAN FINANCE ASSOCIATION

December 21, 1956

MEMORANDUM RE ELECTIONS

As the result of your balloting you elected the following officers and directors:

President	MARSHALL KETCHUM
Vice-president	LESTER CHANDLER
Directors	
Business Finance	JOHN SCANLON
Money and Banking	CHARLS WALKER
International Finance	SAMUEL BRADEN
Investment Finance	PAUL VAN ARSDELL

GEORGE E. HASSETT, JR.
Secretary-Treasurer

SUPPLEMENT TO 1954 MEMBERSHIP DIRECTORY

Following is a list of the current members of the Association who are not listed in the 1954 Association Directory. We apologize to our new subscribing members for failure to indicate their category in this listing; time limitations did not permit a checking of the membership records. The *1954 Membership Directory,* supplemented by this list, will assist members of the Association to determine whether colleagues and acquaintances in the field of finance are now members. If you know of people who should be members and are not, please send their names and addresses to our secretary-treasurer, George E. Hassett, Jr., Graduate School of Business Administration, New York University, 90 Trinity Place, New York 6, N.Y.

Aamodt, Otar M., Prudential Insurance Co., 5757 Wilshire Blvd., Los Angeles 54, Calif.

Aby, Stanton, Kalman & Co., McKnight Bldg., Minneapolis 1, Minn.

Acheson, E. C., George Washington University, Washington, D.C.

Adolfson, Gilbert, 533 S. Prindle Ave., Arlington Heights, Ill.

Aff, Edward A., Federal Reserve Bank of Philadelphia, 925 Chestnut St., Philadelphia, Pa.

Alaska Fur Co., Inc., 1107 Walnut, Kansas City 6, Mo.

Alberts, Francis, 3900 Hamilton St. Apt. E 303, Hyattsville, Md.

Alberts, Francis J., University of Maryland, Dept. of Business Organization, College Park, Md.

Alberts, William W., 8246 S. Woodlawn Ave., Chicago 19, Ill.

Albertson, A. H., 300 Mattison Ave., Ambler, Pa.

Alhadeff, David A., 113 South Hall, University of California, Berkeley, Calif.

Allen, H. K., 226 David Kinley Hall, Urbana, Ill.

Alvorel, Pen M., 512 E. Chalmars, Champaign, Ill.

American Investment Co. of Ill., Att. Mr. Earl R. Tweedie, Asst. Vice-president, 8251 Maryland Ave., St. Louis 24, Mo.

Amrhein, Joseph, St. Michael's College, Winooski, Vt.

Amy, Norman L., Fresno State College, Fresno 4, Calif.

Anderson, Corliss D., Northwestern University, School of Commerce, Evanston, Ill.

Anderson, Peter R., 983 Johnson Place, Union, N.J.

Andrews, Victor L., School of Industrial Management, 50 Memorial Drive, Room 52-025, Cambridge 39, Mass.

Andrus, Malon S., J. G. Whit & Co., Inc., 37 Wall St., New York 5, N.Y.

Angeline, Anthony L., Dept. of Finance, Villanova University, Villanova, Pa.

Anthony, Paul, 123 Martonse, Brooklyn 26, New York

Archer, Stephen H., University of Washington, School of Business Administration, Seattle 5, Wash.

Armel, Daniel E., President, Certified Credit Corp., 129 East Broad St., Columbus 5, Ohio
Armstrong Cork Co., Att: Walter E. Hoadley, Jr., Lancaster, Pa.
Ascher, Leonard, 34 Panoramic Way, Berkeley 4, Calif.
Assisi, Sister Francis, Sacred Heart Dominican College, 6501 Almeda Road, Houston, Tex.
Atkinson, Thomas R., Research Dept., Federal Reserve Bank of Atlanta, Atlanta, Ga.
Axford, H. M., Pacific Lutheran College, Parkland, Wash.

Balles, John J., 1200 Sylvania Road, Cleveland Heights 21, Ohio
Banfield, N. F., Asst. Vice-president, Bishop National Bank of Hawaii, P. O. Box 3200, Honolulu, Hawaii
Bank of America N. T. & S. A., Economics Dept., Room 410, P. O. Box 3415, Rincon Annex, San Francisco 20, Calif.
Barker, C. Austin, 2579 N. Moreland Blvd., Shaker Hts. 20, Ohio
Barkley, Lt. Peyton J., 230 South Kansas, Wichita 7, Kansas
Barnes, Ronald G., 202½ W. Grand River, Williamston, Mich.
Barnum, Robert H., Crum & Forster, 110 William St., New York 38, N.Y.
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Benac, Robert W., 70 School St., Danielson, Conn.
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Black, Robert P., Research Dept., Federal Reserve Bank, Richmond, Va.
Block, Herbert J., P.O. Box 247, Tappan, N.Y.
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Bodfish, Morton, First Federal Savings & Loan Association, 1 S. Dearborn St., Chicago 3, Ill.
Boly, Raymond, Banking and Finance Dept., School of Commerce, New York University, New York 3, N.Y.
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Bowman, R. Wallace, 87 Crest Road, Wellesley 81, Mass.
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Brehm, Carl T., Michigan State University, East Lansing, Mich.

Brewer, Charles F., Indianapolis Life Insurance Co., 2960 N. Meridian St., Indianapolis, Ind.
Briant, Peter C., University of Michigan, School of Business Administration, Ann Arbor, Mich.
Briggs, R. P., 212 W. Michigan, Jackson, Mich.
Broman, Keith L., Social Science No. 322, University of Nebraska, Lincoln 8, Nebr.
Brooke, W. Saurin, 36 Barrie St., Kingston, Ontario, Canada
Brown, Charles H., C. G. Brown Co., 175 S. Los Robles Ave., Pasadena, Calif.
Brown, Jonathan A., Windsor Road, Darien, Conn.
Brown, Joseph G., 247-19 77 Crescent, Bellerose, N.Y.
Browne, Martha Steffy, 510 E. 23d St., New York 10, N.Y.
Bruechert, Donald W., McCormick & Co., 231 S. La Salle St., Chicago 4, Ill.
Brunhild, Gordon, 9408 Cattaraugus Avenue, Los Angeles 34, Calif.
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Byrne, L. P., 5520 Avonmore Ave., Montreal, Quebec, Canada

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Canadian Tax Foundation, The, 154 University Ave., Toronto 1, Canada
Cantrell, Lang L., 1147 Berkeley St., Santa Monica, Calif.
Carley, David, Wisconsin State Chamber of Commerce, 119 Monona Ave., Madison 3, Wis.
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Casanova, Miguel, 23 Hill St., Waterbury 10, Conn.
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Chiu, C. C., Irving Trust Company, One Wall Street, New York 15, N.Y.
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Cohen, Leo, Kansas State College, Dept. of Economics, Manhattan, Kans.

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Gay, N. P., General Electric Company, Bldg. 2, Room 125, Schenectady 5, N.Y.
Gehring, Richard L., 6502—26th Ave., Kenosha, Wis.
General Foods Corp., Corporate Finance Division, 250 North St., White Plains, N.Y.
Genovese, Frank C., Babson Institute of Business Admin., Babson Park 57, Mass.
Gentner, Harry A., Provident Mutual Life Insurance Co., 4601 Market St., Philadelphia 1, Pa.
Gettell, Richard G., The Texas Company, 135 E. 42nd St., New York 17, N.Y.
Getzendanner, J. W., Jr., National City Bank of Cleveland, Cleveland 1, Ohio
Gilman, Stephen, International Accountants Soc., Inc., 209 W. Jackson Blvd., Chicago 6, Ill.
Girton, Margaret E., Duff, Anderson & Clark, 208 S. La Salle St., Chicago 4, Ill.
Gloster, Jesse E., Texas Southern University, 3201 Wheeler Ave., Houston 4, Tex.
Goeglein, M. L., Pacific Finance Corp., 621 S. Hope St., Los Angeles 17, Calif.
Goldstine, Abner D., Federal Reserve Bank of Chicago, Chicago 90, Ill.
Goodin, E. Richard, Jr., Union National Bank of Wichita, P. O. Box 637, Wichita, Kansas
Graham, Thomas L., 1910 Holmby Ave., Los Angeles 25, Calif.
Graham, William M., 4419 N. 35th St., Arlington 7, Va.
Grant, Arthur, College of Business Administration, University of Rhode Island, Kingston, R. I.
Grayson, C. J., Jr., 1438 Fern St., New Orleans 18, La.
Great National Life Insurance Co., Att: Robert F. Weichsel, 802 Great National Life Bldg., Dallas, Tex.
Grebler, Leo, Council of Economic Advisers, Executive Office Bldg., 17th & Pennsylvania, N. W., Washington, D. C.
Green, Virgil A., 735 N. Water St., Milwaukee 2, Wis.
Greenwood, John E. D., % Bacon, Stevenson & Co., 39 Broadway, New York 6, N.Y.
Griffin, H. R., Superior Savings & Loan Association, 1130 San Fernando Road, San Fernando, Calif.

Griffin, James H., 968 Hereford Drive, Akron 3, Ohio
Griswold, James W., The Phillips Exeter Academy, Exeter, N.H.
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